

REMARKS

Claims 89, 92, 95, 98, 101, 104, 107, 110, 113, 116, 119, 122, 125, 128, 131, 134, 137, 140, 143, 146, 149, 152, 155, 158, 161, 164, 167, 170, 173, 176, 179, 182, 185, 188, 191, 194, 197, 200, 203, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260-285, 301, 303-307, 309-310, 312-313, 315, 319, and 327 are currently pending in the application. Claims 87-88, 90-91, 93-94, 96-97, 99-100, 102-103, 105-106, 108-109, 111-112, 114-115, 117-118, 120-121, 123-124, 126-127, 129-130, 132-133, 135-136, 138-139, 141-142, 144-145, 147-148, 150-151, 153-154, 156-157, 159-160, 162-163, 165-166, 168-169, 171-172, 174-175, 177-178, 180-181, 183-184, 186-187, 189-190, 192-193, 195-196, 198-199, 201-202, 204-205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 286-300, 302, 308, 311, 314, 316-318, and 320-326 have been canceled. Claims 89, 92, 95, 98, 101, 104, 107, 110, 113, 116, 119, 122, 125, 134, 137, 140, 146, 149, 158, 161, 164, 167, 170, 173, 182, 185, 188, 194, 197, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260-261, 263-264, 266-269, 277-278, 284-285, 301, 303, 306-307, 309-310, 313, 319 and 327 have been amended. Applicant requests reconsideration of the application in light of the following remarks.

Telephone Interview

Applicant's representatives wish to thank the Examiners for their courtesy and time during several telephone interviews that were held during August and September of 2005 in preparation for an interview to be held on September 20, 2005. Examiner Jagannathan's comments and insight were very helpful with regard to his confirmation that it appeared that a new supplemental Office action would be required since the previous Office action included rejections under 35 U.S.C. 112 rejection of claims that were copies of claims issued in the interfering patent. Also, Applicant's representative pointed out the ambiguity caused by the cover page indication that the Office action was "Non-Final" whereas the body of the action indicated that the rejection was a "Final" rejection. Examiner Jagannathan stated that if in the

interview it is determined that the finality should be withdrawn based on the ambiguity or other factors, then he would send out a non-final Office action. Examiner Jagannathan also enlisted the help of a Special Programs Examiner, Christine Tierney, whose specialty includes Interference Proceedings. Her comments and insight were very helpful during the course of the interview, and the Applicant wishes to thank Examiners Jagannathan and Sanders for including her in our interview. It is hoped that the comments below reflect the spirit of the telephone interviews as well as the in-person interview.

Generally

The Examiners are thanked for the supplemental non-final Office action in accordance with the Examiners' assertive efforts in the interviews.

Generally, the Applicant has canceled numerous claims, replaced objectionable terminology in other claims, and amended the Specification in the present application to remove terminology that the Examiner holds not to be explicitly supported by the original disclosure of the present invention. The original disclosure of the present invention is considered to be provided by the patent application from which U.S. Patent No. 6,221,145 issued to McClain. In fact, several of the claims including claims 284, 306, and 309 have been voluntarily amended to remove certain limitations, and to better coincide with explicitly disclosed details in the '145 specification. The amendments to the present claims and specification herein are considered to be completely supported by the original disclosure of the '145 patent to McClain. That is, the terminology that was objected to by the Examiner in the current and previous Office actions has been removed, and the current claims now have support in the original disclosure of the '145 patent to McClain.

The claims currently presented correspond to claims of U.S. Patent No. 6,531,537 to Friel et al., which is junior to the '145 patent to McClain. Applicant believes that the difference in terms has not affected the patentability of the current claims. That is, the claims herein presented should have been just as patentable or more so to McClain at the time of the original application by McClain filed December 23, 1998 than were the corresponding claims

that were granted to Friel et al in a subsequent application, having an earliest possible priority date of February 18, 2000, which later issued as U.S. Patent 6,531,537 to Friel et al.

Importantly, the claims in the ‘537 patent to Friel read on Applicant’s invention and could be used to exclude Applicant from practicing his own invention. (See the accompanying claims chart, Exhibit W, showing the claims of the ‘537 patent in side by side relation to corresponding presently presented claims in the first and second columns respectively. Claim numbers from a related application by Friel et al., and which was part of an interference request, appear in the left hand column and are designated with the letter “A” before the application claim number.) Therefore, allowance of claims 89, 92, 95, 98, 101, 104, 107, 110, 113, 116, 119, 122, 125, 128, 131, 134, 137, 140, 143, 146, 149, 152, 155, 158, 161, 164, 167, 170, 173, 176, 179, 182, 185, 188, 191, 194, 197, 200, 203, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260-285, 301, 303-307, 309-310, 312-313, 315, 319, and 327 is earnestly solicited so that an interference proceeding may be declared.

Objections to the Specification under 35 U.S.C. 132 - New Matter

The previously submitted amendment has been objected to under 35 U.S.C. 132 for allegedly introducing new matter into the disclosure. Although Applicant disagrees with the Examiner’s assessment that new matter has been entered, Applicant has amended the paragraphs of pages 2, 6, 9, and 10 of the specification to remove the matter objected to. Some minor clarifying additions that are fully supported by the original disclosure have been included. Any added terms that were not explicitly in the original disclosure of December 23, 1998 are inherent in the original disclosure as will be explained below. Applicant respectfully requests that the Examiner withdraw the objection under 35 U.S.C. 132.

Applicant has amended the specification to address the Examiner’s concerns by modifying the paragraphs to which the Examiner objected. The modifications have eliminated most of the language held in question by the Examiner and changed verbiage to highlight the inherent nature of the recited features for any remaining language that was necessarily added to

support the claims. Where possible, the needed terminology has been recited in the alternative. For example, the paragraph starting on page 6, line 19, has been amended to recite: “percent by weight or a corresponding range of pigment volume concentrations (“PVC”). Otherwise, the added terminology specifically points out how the features are inherent and/or refers to the features as exemplary. Therefore, Applicant respectfully requests that the Examiner withdraw the objection to the specification.

Rejections under 35 U.S.C. §112, First Paragraph

Claims 87-312, 315-316, 321, 324, and 325 stand rejected by the Examiner under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification with sufficient detail. While Applicant believes that the previously claimed subject matter was inherently provided or was provided in alternative terminology in the original specification, the terms objected to have been deleted. As such, it is requested that the Examiner consider the claims and subject matter in context to determine patentability based on the time the application was filed. Applicant believes that by a contextual reading, it will be clear to the Examiner that Applicant uses components that qualify within the scope of original terminology of the present application for several phantom counts for the purpose of provoking an interference in the event that the presently presented claims be found to be patentable. Support for the terminology is no longer considered to be a barrier since the terminology objected to has been deleted. That the present claims and the claims of the ‘537 patent to Friel are directed to the same invention is made clear in the interference request filed October 7, 2003. How the claims are directed to the same invention even though they incorporate different terminology is also explained below. How the claims in the present application correspond to the Friel ‘537 patent claims is further highlighted and explained in the claims chart of Exhibit W, included herewith. Therefore, Applicant traverses the rejection under 35 U.S.C. 112, first paragraph and request allowance of the claims that are the subject of this rejection.

On the other hand, any remaining or additional terms that the Examiner may discover not to be explicitly supported by Applicant's original disclosure should not be further objected to since the MPEP § 608.01(o) states that "...sometimes in amending the claims or in adding new claims, new terms are introduced that do not appear in the specification...". Thus, Applicant is not limited to the nomenclature used in the original application. When claims are amended, exact terminology between the specification and the claims need not be used to satisfy the requirements of the first paragraph of 35 U.S.C. § 112. MPEP § 1302.01, ¶13.08 states that "exact terms need not be used in haec verba to satisfy the written description requirement of the first paragraph of 35 U.S.C. 112. Eiselstein v. Frank, 52 F.3d 1035, 1038, 34 USPQ2d 1467, 1470 (Fed. Cir. 1995); In re Wertheim, 541 F.2d 257, 265, 191 USPQ 90, 98 (CCPA 1976)". See also 37 CFR 1.121(e) which merely requires substantial correspondence between the language of the claims and the language of the specification.

Nevertheless, in response to the Examiner's requirement for strict antecedent basis and to accelerate prosecution on the merits, Applicant has amended the specification to eliminate terminology that the Examiner objected to. Now the specification is considered to more succinctly and simply provide proper antecedent basis since the terminology in the current claims is supported by each of the original disclosure of the application filed December 23, 1998 and the present application as it has been amended.

In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. See Brown v. 3M, 265 F.3d 1349, 1352 (Fed Cir. 2001) (holding that the claims did "not require elaborate interpretation"). In such circumstances, general purpose dictionaries may be helpful. In many cases that give rise to litigation, however, determining the ordinary and customary meaning of the claim requires examination of terms that have a particular meaning in a field of art. Because the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to "those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean." Innova, 381 F.3d at 1116. Those sources include "the words of the claims themselves, the remainder of the specification, the

prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” Id.; see also Gemstar-TV Guide Int’l, Inc. v. Int’l Trade Comm’n, 383 F.3d 1352, 1364 (Fed. Cir. 2004); Vitronics, 90 F.3d at 1582-83; Markman, 52 F.3d at 979-80.

Thus, to determine the meaning of claim language, one should look at “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” Id. Although Applicant does not believe the claim terms were ambiguous or unsupported in the context of Applicant’s specification, dictionaries, and terms that were known at the time of the invention, Applicant has amended the specification and claims to ensure that proper antecedent basis for the currently claimed matter was provided by the original specification filed December 23, 1998. Furthermore, Applicant has relied upon publications and statements by artisans of ordinary skill in the art as needed to clarify terms that were asserted as being unclear by the Patent office.

"Mutually Compatible":

Claims 87, 88, 90, 91, 93, 94, 96, 97, 99, 100, 102, 103, 105, 111, 112, 114, 115, 117, 118, 120, 121-124, 126, 127, 129, 130, 132, 133, 135, 136, 138, 139, 141, 142, 144, 145, 147, 148, 150, 151, 153, 154, 156, 157, 159, 160, 162, 163, 165, 166, 168, 169, 171, 172, 174, 175, 177, 178, 180, 181, 183, 184, 186, 187, 189, 190, 192, 193, 195, 196, 198, 199, 201, 202, 204, 205, 207-230, 247, 248-258, 310, 311, 321, 324, and 325 stand rejected by the Examiner under 35 U.S.C. 112, first paragraph because of the term “mutually compatible” in the preamble. For the general reasons set forth above and the specific reasons regarding the term “mutually compatible” as set forth below, Applicants respectfully request that the rejection of these claims under 35 U.S.C. § 112, first paragraph be withdrawn.

Claims 87-88, 90-91, 93-94, 96-97, 99-100, 102-103, 105-106, 108-109, 111-112, 114-115, 117-118, 120-121, 123-124, 126-127, 129-130, 132-133, 135-136, 138-139, 141-142, 144-145, 147-148, 150-151, 153-154, 156-157, 159-160, 162-163, 165-166, 168-169, 171-172, 174-175, 177-178, 180-181, 183-184, 186-187, 189-190, 192-193, 195-196, 198-199,

201-202, 204-205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 286-300, 302, 308, 311, 314, 316-318, and 320-326 have been canceled. Thus, only claims 122, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 248, 250, 252, 254, 256, 258, and 310 of the claims listed in the rejection based on the term “mutually compatible” remain in the application. The rejection of claim 122 appears to have been a mistake since the term “mutually compatible” was not in claim 122. Nevertheless, the remaining claims have been checked and amended to eliminate or replace the term “mutually compatible”. Therefore, the rejection under 35 U.S.C. § 112, first paragraph based on the term “mutually compatible” should be withdrawn.

The term “mutually compatible” has been deleted or replaced in the claims in which it previously was recited. When replaced, the term “stable” has been substituted for the terms “mutually compatible” and “compatible”. The term “stable” is supported by the original disclosure of the ‘145 patent to McClain, and taken in context has a similar meaning to the term “mutually compatible”. Therefore, the rejection under 35 U.S.C. § 112, first paragraph for the term “mutually compatible” has been obviated and should be withdrawn.

To establish the similarity of the replacement term “stable”, the meaning of “mutually compatible” will be set forth. The term "compatible" is defined by the American Heritage Dictionary of the English Language, Fourth Edition as (see dictionary.reference.com/search?q=compatible):

1. Capable of existing or performing in harmonious, agreeable, or congenial combination with another or others.
2. Capable of orderly, efficient integration and operation with other elements in a system with no modification or conversion required.
3. Capable of forming a chemically or biochemically stable system.

"Mutually" compatible means the components are compatible with each other. The compatibility of the components in paint and their resulting stable mixture has long been a concern for paint manufacturers. Instable paint is highly undesirable. Those of ordinary skill in the paint industry understand the meaning of the terminology "mutually compatible." One

example of this understanding is found in the Tsuei reference cited by the Examiner (U.S. Patent 5,643,669). Tsuei explains at col. 6, lines 20-26, "'compatible' means that the component does not cause adverse affects to the curable composition (e.g. precipitation, flocculation, or other separation of the components), or to the cured coating (e.g., disruption of film continuity, phase separation, or loss of adhesion to the backing)." This is a conventional meaning for the term as it is used in the paint art.

Although the Examiner states that "there is nothing in the specification which would suggest that Applicant's prepaints are free of signs of colloidal instability and flocculation", Applicant described its prepaints as being "stable" in the priority document patent to McClain ('145) at column 1, lines 41-44 and lines 64-66; column 2, lines 15-18, and column 3, lines 49-51. This definition is consistent with the dictionary definition of "compatible" set forth above. It is also consistent with the dictionary definition of "stable".

The American Heritage Dictionary of the English Language, Fourth Edition defines "stable" as ([see dictionary.reference.com/search?q=stable](http://dictionary.reference.com/search?q=stable)):

1. a. Resistant to change of position or condition; not easily moved or disturbed.
 - b. Not subject to sudden or extreme change or fluctuation.
 - c. Maintaining equilibrium; self restoring.
2. Enduring or permanent.
3. a. Consistently dependable; steadfast of purpose.
 - b. Not subject to mental illness or irrationality.
4. Physics: Having no known mode of decay; indefinitely long lived. Used of atomic particles.
5. Chemistry: Not easily decomposed or otherwise modified chemically.

To be stable, the components are inherently compatible. If they were not compatible, they would by definition not form a chemically stable system. Thus, Applicant conveys in the

McClain ('145) patent to one skilled in the art of paint that Applicant had possession of the invention at the time the McClain ('145) patent was filed.

The description in the specification of McClain ('145) also provides a definition for "stable" that coincides with the dictionary definitions set forth above and "suggests" freedom from "colloidal instability" and flocculation. That is, the description in the McClain ('145) patent states that the "compositions ... exhibit stable characteristics during storage in their respective reservoirs"; discusses a specific way to enable a composition of the present invention "to maintain a uniform distribution of the solid throughout its volume"; states that "four premixed aqueous compositions ... are sufficiently stable to be utilized at the point of sale"; and states that the "four above-discussed formulations have been determined to be stable and free from settling when stored in reservoirs for extended periods". See McClain ('145) at column 1, lines 41-44 and lines 64-66; column 2, lines 15-18, and column 3, lines 49-51 and corresponding portion of the present application. The prepaints of McClain '145 are also stable when mixed to form usable paint.

Therefore, the present application is considered to have support for the terms "mutually compatible" or "stable". Nevertheless, the term "mutually compatible" has been deleted or replaced by the term "stable" to provide explicit antecedent basis as required by the Examiner. Therefore, the rejection based on "mutually compatible" should be withdrawn.

"Extender Pigment":

Claims 87, 88, 90, 91, 93, 94, 96, 97, 99, 100, 102, 103, 111, 112, 114, 115, 117, 118, 120, 121-124, 126, 127, 129, 130, 132, 133, 135, 136, 138, 139, 141, 142, 144, 145, 147, 148, 150, 151, 153, 154, 156, 157, 159, 160, 162, 163, 165, 166, 168, 169, 171, 172, 174, 175, 177, 178, 180, 181, 183, 184, 186, 187, 189, 190, 192, 193, 195, 196, 198, 199, 201, 202, 204, and 205 stand rejected by the Examiner under 35 U.S.C. § 112 because they include either the term "extender pigment" or because in the opinion of the Examiner, the original disclosure fails to associate the term "extender pigments" with materials that are disclosed as extenders. However, in order to avoid further delay, applicant has amended the pertinent

claims to change "extender pigment" and/or "flattening agent" to —at least one of calcined clay, ground limestone, diatomaceous earth and silica—. Support for each of these elements is found in the specification. (See page 7, lines 1-3 and page 8, line 24 through page 9, line 1 of the present application.) Applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 112 first paragraph be withdrawn for the general reasons set forth above and for the specific reasons set forth below.

In particular, claims 87-88, 90-91, 93-94, 96-97, 99-100, 102-103, 105-106, 108-109, 111-112, 114-115, 117-118, 120-121, 123-124, 126-127, 129-130, 132-133, 135-136, 138-139, 141-142, 144-145, 147-148, 150-151, 153-154, 156-157, 159-160, 162-163, 165-166, 168-169, 171-172, 174-175, 177-178, 180-181, 183-184, 186-187, 189-190, 192-193, 195-196, 198-199, 201-202, 204-205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 286-300, 316-318, and 320-326 have been canceled. The rejection of claim 122 appears to have been a mistake since the term "extender" was not in claim 122. Thus, it appears that none of the claims listed as rejected based on the term "extender pigment" remains in the application. Nevertheless, the remaining claims have been checked and amended to eliminate or replace the term "extender pigment". Therefore, the rejection under 35 U.S.C. § 112, first paragraph based on the term "extender pigment" should be withdrawn because it is no longer claimed and the rejection is improper because support exists for an extender pigment.

Applicants believe that the present application and the priority document (McClain '145) have support for the term "extender pigment" and the terms substituted therefor by this amendment. Specifically, these terms are supported as set forth in the following paragraphs.

In the Request for Interference, page 8, Applicants amended the paragraph of the application beginning on page 8, line 20 to include the terminology "extender pigment". Beginning at page 55, middle paragraph, of the Request filed October 7, 2003, and also on page 59 of the same Request, Applicants also explained "extender pigments" and why Applicant's specification includes "extender pigments".

The term extenders, or extender pigments, is well known in the paint art to those of ordinary skill in the art. Those of ordinary skill in the art would know that which Applicants

intend by this term “extender”. Applicant’s use of the term “extender” is the ordinary use of the term in the relevant art such that a standard dictionary definition predating the priority date represents that which was known in the art. Thus, the standard dictionary definition provides evidence that the term “extender” was known and associated with the materials recited in the Applicant’s original specification. Page 108 from the Coatings Dictionary referenced in the Request for Interference is attached hereto in Exhibit X, Addendum for this purpose. Even in the Coatings Dictionary definition of “extender”, calcium carbonate and calcined clay are listed as examples of extender pigments. As explained in the Request for Interference, natural calcium carbonate is "limestone", which is disclosed in Applicant’s specification. (See page 166 of Exhibit X, Addendum attached hereto, copied from the same Coatings Dictionary referenced in the Request for Interference as Exhibit D.) Furthermore, Applicant should not be limited from reciting a feature of the invention in the broadest possible manner. That is, the Applicant should be permitted to use the broader term “extender agent” as opposed to a narrower terms, “limestone”, “calcined clay”, “silica”, or “diatomaceous earth” for the purpose of obtaining the broadest possible coverage. This is particularly so because the narrower terms represent the materials used in a vast majority of extender application in the construction or architectural paint art. As such, the disclosure of three or four species provides an adequate basis for claiming the genus.

To one skilled in the art of paint Applicant's specification does teach and suggest the use of extender pigments as they are and were known in the art at the time of the invention.

"Latex Polymeric Binder":

Claims 87, 90, 93, 96, 99, 105, 111, 117, 120, 123, 126, 129, 132, 135, 138, 141, 144, 147, 150, 153, 156, 159, 162, 165, 168, 171, 174, 177, 180, 183, 186, 189, 192, 195, 198, 201, 204, and 247 stand rejected by the Examiner under 35 U.S.C. 112 because they incorporate the term “latex polymeric binder”. However, as set forth in general arguments above, the present application and the priority document have support for “latex polymeric binder”. Specific arguments setting forth how the original disclosure of this application and

the priority document support this terminology are set forth below. However, in order to advance prosecution and comply with the Examiner's requirements the term "latex" and "polymeric" have been eliminated from the claims and the disclosure. Rather, applicant is now claiming a "binder prepaint" which is supported in the specification as originally filed. Therefore, Applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 112 first paragraph be withdrawn.

In particular, claims 87-88, 90-91, 93-94, 96-97, 99-100, 102-103, 105-106, 108-109, 111-112, 114-115, 117-118, 120-121, 123-124, 126-127, 129-130, 132-133, 135-136, 138-139, 141-142, 144-145, 147-148, 150-151, 153-154, 156-157, 159-160, 162-163, 165-166, 168-169, 171-172, 174-175, 177-178, 180-181, 183-184, 186-187, 189-190, 192-193, 195-196, 198-199, 201-202, 204-205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 286-300, 302, 308, 311, 314, 316-318, and 320-326 have been canceled. Thus, none of the claims listed in the rejection based on the term "latex polymeric binder" appear to remain in the application. Nevertheless, the remaining claims have been checked to eliminate or replace the terms "latex" and "polymeric" with terms that have support in the original disclosure.

On the other hand, the term "latex polymeric binder" is a descriptive term which refers to binders that are specifically latex polymers. This terminology would be understood to be encompassed by the original disclosure of each of the present application and the priority document ('145 patent to McClain) from which this application depends by one of ordinary skill in the art at the time of the invention. To satisfy the requirements of the last Office action, Applicant has deleted the term "latex polymeric binder". However, it is clear from the original disclosure of the '145 patent to McClain that the exemplary resin cited by Applicant is polymeric and inherently produces a latex paint composition. Therefore, the original disclosure is considered to support both "latex polymeric binder" and the alternative language now used by Applicant herein.

The most recent Office Action asserts there is nothing in Applicant's specification to suggest that applicant uses a latex polymeric binder. In Applicant's Request for Interference, on pages 55 and 56 and in the attached Declaration of Alan Smith (Exhibit Y Addendum

included herewith) Applicant explains why the BASF 6183 is a latex polymeric binder. From these documents, it is clear that disclosure of BASF 6183 is a teaching and a suggestion to use latex polymeric binders. Applicant's original disclosure also supports analogous terminology which is now relied upon to claim this feature. This terminology includes "binder composition", which is disclosed as having a high resin content. At the time of the present invention, others had not discovered the benefits of using a plurality of premixed aqueous compositions including a high resin binder composition as does Applicant. Applicant should not be prevented from claiming this feature in the broadest possible way.

Although the feature of a "high resin" or "binder prepaint" in combination with other premixed compositions is considered to be patentable, the most recent Office action focused on a specific example of a material used to formulate the "high resin prepaint". In doing so, it appears that the Office attempted to rely upon the example in Applicant's disclosure that uses 100% acrylic acrylon resin in order to assert that this somehow negates the support for a "latex polymeric binder." Applicant reminds the Office, however, that the fact that a paint is an acrylic paint does not preclude the paint being a latex paint as well. See, for example, Exhibit E of the Request for Interference where BASF refers to 6183 (Aronal Optive 220) as an "acrylic latex polymer"; see also, page 6 of Exhibit X Addendum, attached hereto, which includes an "acrylic latex"; and see the declaration by Alan Smith, included herewith as Exhibit Y Addendum. The mixture, for example, could include 100% acrylic latex and still be a 100% acrylic paint. Applicant is permitted to claim his invention broadly. BASF 6183 is just one example of a latex polymeric binder, which is disclosed as one possibility for a primary constituent of the "high resin" or "binder prepaint" in accordance with the original disclosure of the present invention. (See the '145 patent to McClain, column 3, lines 45-47 which states that "other commercially available resins can be used if desired.") Thus, the "high resin prepaints" in combination with the other compositions is analogous to a composition that includes a "latex polymeric binder". Others had not discovered the benefits of premixing compositions including the "high resin prepaint" of the present invention at the time of the present invention. Therefore, claiming the "high resin prepaint" in combination with the other recited features is considered to be equally or more patentable than corresponding claims in the '537 patent since the present invention predates the '537 patent.

To one skilled in the art of paint, Applicant clearly did convey that Applicant did have possession of the invention at the time the application was filed and Applicant's specification does teach and suggest the use of at least one of a latex polymeric binder as it is known in the art and a high resin binder composition that includes a resin that is polymeric and inherently produces a latex paint composition.

"Opacifying Pigment":

Claims 87-258 and 261-312 were rejected by the Examiner under 35 U.S.C. 112 first paragraph because they incorporate the term "opacifying pigment". However, as set forth in the general arguments above and in the specific arguments in the following paragraphs, the specification as originally filed has support for this term. On the other hand, in order to advance prosecution and comply with the Examiner's requirements, the term "opacifying pigment" has been eliminated. This term has been substituted by the term "pigment" for which the present application and the original disclosure had support since the premixed composition that includes the opacifying pigment (TiO₂) is referred to as the "pigment composition" throughout the original specification. Nevertheless, the term "opacifying" has been eliminated from the specification and the claims of the present application. Therefore, Applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 112 based on "opacifying" be withdrawn.

In particular, claims 87-88, 90-91, 93-94, 96-97, 99-100, 102-103, 105-106, 108-109, 111-112, 114-115, 117-118, 120-121, 123-124, 126-127, 129-130, 132-133, 135-136, 138-139, 141-142, 144-145, 147-148, 150-151, 153-154, 156-157, 159-160, 162-163, 165-166, 168-169, 171-172, 174-175, 177-178, 180-181, 183-184, 186-187, 189-190, 192-193, 195-196, 198-199, 201-202, 204-205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 286-300, 302, 308, 311, 314, 316-318, and 320-326 have been canceled. Thus, only claims 89, 92, 95, 98, 101, 104, 107, 110, 113, 116, 119, 122, 125, 128, 131, 134, 137, 140, 143, 146, 149, 152, 155, 158, 161, 164, 167, 170, 173, 176, 179, 182, 185, 188, 191, 194, 197, 200, 203, 206,

208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 261-285, 301, 303-307, 309-310, and 312 of the claims rejected based on “opacifying pigment” remain in the application. Nevertheless, the remaining claims have been amended to eliminate or replace the term “opacifying pigment” with a term that has support in the original disclosure. Therefore, the rejection under 35 U.S.C. § 112, first paragraph based on the term “opacifying pigment” should be withdrawn.

The term "opacifying pigment" is a descriptive term used to refer to pigments that are incorporated for the purpose of opacifying a composition. The term of art, "opacifying pigment", would have been understood by one of ordinary skill in the art at the time of the invention. Also, Titanium Dioxide would have been universally accepted as a predominant example of this term of art ("opacifying pigment") at the time of the invention. This is so because Titanium Dioxide traditionally and currently is the most widely used opacifying pigment for paint. In fact, the definition of Titanium Dioxide (see page 280 of Exhibit X included herewith and in Exhibit D of the Request for Interference) states that Titanium Dioxide is a high-opacity pigment. This Coatings dictionary from which this definition was copied was published in 1995, at least three years prior to the filing date of the original disclosure of the present invention. In Applicant's Request for Interference, Applicant explains on pages 55 and 59 why Applicant's original disclosure includes an opacifying pigment. Therefore, the original disclosure is still considered to support the term "opacifying pigment", and it at least supports the term "pigment" as it relates to the pigment composition as now claimed. Since none of the prior art teaches or suggests premixing a stable pigment composition to be subsequently used to formulate an actual paint product, recitation of the opacifying pigment composition as the "pigment composition" in combination with the other elements in corresponding claims of the '537 patent appears to be as patentable or more so than the '537 patent because the priority document ('145 patent) predates the '537 patent.

The most recent Office Action focuses on the term "opacifying" and alleges that an ordinary practitioner in the art would not know which types of pigments are intended by the term "opacifying pigment". However, as is well known in the art, "opacity" is the degree to which a material obscures a substrate. As explained on pages 213 and 214 of Exhibit X Addendum, attached hereto, Pigments can provide many different qualities to paint, such as

opacity, hardness, durability and corrosion resistance. The specific example of “Titanium Dioxide” set forth in Applicant’s disclosure is the most widely used and known opacifying pigment in the paint industry. Furthermore, the definition of Titanium Dioxide in the Coatings Encyclopedic Dictionary (Exhibit X, Addendum attached hereto and Exhibit D of the Request for Interference) states that Titanium dioxide is a “high opacity” pigment as set forth above. Therefore, it is clear that Applicant intends to support pigments including an “opacifying pigment”. On the other hand, as set forth above, the patentable aspect of providing a plurality of premixed aqueous compositions including a “pigment composition” is not taught or suggested in the prior art. Applicant should not be precluded from claiming it in the broadest possible terms. Therefore, the claims as now presented with “pigment” replacing “opacifying pigment” in combination with other claimed elements is considered to be as patentable or more so than the corresponding claims in the ‘537 patent.

Even though the Office asserts that Titanium Dioxide does not appear to correspond to an opacifying pigment in the manner described by Friel, it should be noted that Titanium Dioxide is a well known pigment that affects opacity and it is expressly included by Friel as one of Friel's opacifying pigments.

Therefore, to one skilled in the art of paint, Applicant did convey that Applicant had possession of the invention at the time the application was filed and Applicant's specification does teach and suggest the use of an opacifying pigment or a pigment composition that may include the most commonly used opacifying pigment known in the construction paint industry.

"Adsorbed":

Claims 93, 94, 95, 96, 97, 98, 135-140, 183-188, 235-236, 263-264, 277-278, 293-294 and 315-316 stand rejected by the Examiner under 35 U.S.C. 112. However, the original specification inherently supports this terminology since adsorption will occur in the processes and products which are the subject of the present invention, as described below. A new paragraph has been added after page 9, line 13 explicitly include the term “adsorbed” and

provide antecedent basis for the claims. Therefore, Applicants respectfully requests that the rejection of these claims under 35 U.S.C. § 112 be withdrawn.

In particular, claims 87-88, 90-91, 93-94, 96-97, 99-100, 102-103, 105-106, 108-109, 111-112, 114-115, 117-118, 120-121, 123-124, 126-127, 129-130, 132-133, 135-136, 138-139, 141-142, 144-145, 147-148, 150-151, 153-154, 156-157, 159-160, 162-163, 165-166, 168-169, 171-172, 174-175, 177-178, 180-181, 183-184, 186-187, 189-190, 192-193, 195-196, 198-199, 201-202, 204-205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 286-300, 302, 308, 311, 314, 316-318, and 320-326 have been canceled. Thus, only claims 95, 98, 137, 140, 185, 188, 236, 263-264, 277-278, and 315 of the claims rejected based on "adsorbed" remain in the application. Nevertheless, the remaining claims have been checked for the term "adsorbed" to assure that the claims are supported by the original disclosure. Therefore, the rejection under 35 U.S.C. § 112, first paragraph based on the term "adsorbed" should be withdrawn.

Applicant included at page 60, middle paragraph, of the Request for Interference, an explanation of why adsorption is supported by the specification. Although the term "adsorb" was not expressly stated in Applicant's disclosure prior to this amendment, the fact that the components when mixed do "adsorb" is inherent. Due to the nature of the pigments, (including Titanium Dioxide, Silica, Limestone, Calcined Clay, and Diatomaceous Earth, which may be referred to by terms including opacifying pigment, extender pigment, flattening agent), as used with the resinous binder, adsorption inherently occurs.

The disclosure of the specification of the present application at the time of the invention would convey to one of ordinary skill in the art that adsorption inherently occurs when these components are combined or mixed and thus brought into contact with the resinous binder. (See the declaration by Alan Smith in Exhibit Y Addendum, attached hereto.) Therefore, the disclosure inherently supports recitation of "adsorbed".

"PVC":

Applicant has amended the specification to include the reference to PVC, pigment volume concentration. PVC adds nothing to and takes nothing away from the original disclosure. Rather, PVC is another manner of measuring or valuating physical properties. The term PVC has been in use for a long time, as evidenced by the publication date of April of 1979 of a Book containing a section devoted to PVC. (See Exhibit Z included herewith.) Exhibit Z includes a copy of Web pages accessed at the address:

http://www.amazon.com/gp/product/0471032727/ref=sid_dp_dp/102-7521434-3263340?%5Fencoding=UTF8&v=glance&n=283155

or

http://www.amazon.com/exec/obidos/tg/detail/-/0471032727/ref=olp_product_details/102-742864-9738552?%5Fencoding=UTF8&v=glance

This address is the result of a search for the featured book, and the associated Web pages recite subject matter addressed in the book including pigment volume concentration (PVC) as marked on the second page of the Copies included in Exhibit Z Addendum, attached hereto. Thus, it is clear that PVC is a known term of art, and was at the time of publication marked on the second page.

Use of PVC, volume solids content, or weight percentage does not change the essential methods and products of the present invention. In a simplistic example, arguing that PVC adds new matter is like arguing that changing terminology from units of yards to units of inches adds new matter. Applied to an infringement situation this argument would be that by claiming the invention in terms of "inches" instead of "yards" with the same basic method or product remaining the same, an infringer will be granted a patent and considered not to infringe as long as the infringed disclosure does not have the term "inches" in it. This is clearly erroneous. Rather, it should be clear for example, that if an infringer uses inches to represent length while

the infringed application uses yards then the Applicant should not be precluded from copying of claims or incorporating terminology such as “inches” in place of “yards”. Alternatively stated, a physical characteristic common to both a patent and an application is inherent to each no matter what units of measure or combination of units of measure, which are utilized to describe the physical characteristic.

The subject compositions have pigment volume concentrations (PVC) that are inherent and that can be calculated from weight percentages for particular material ratios in the compositions. Therefore, Applicant should not be precluded from claiming the invention in terms of PVC to secure rights for which there is seniority, which seniority Applicant has in the present application.

Conclusion Regarding the Rejection under 35 U.S.C. § 112, First Paragraph

Applicant believes this explanation and the amendments to the specification resolve the section 112, first paragraph issues associated with the claims. Applicant's use of the terms "mutually compatible", "latex polymeric binder", "extender pigment", and "opacifying pigment" were intended to be descriptive uses of the terms as the common terms are known and as would be understood by those of ordinary skill in the art. However, these terms have been removed from the claims in accordance with the Examiner's requirements. The terms "adsorbed" and "PVC" are considered to be inherently supported by the original disclosure. Amendments to the Specification have been made to provide explicit antecedent basis for these terms as they appear in the claims. These amendments do not add new matter since they recite only that which is either explicitly supported by the original disclosure or inherent. On the other hand, the Examiner is reminded that these additional terms need not be explicitly supported by Applicant's original disclosure in order to be claimed since the MPEP § 608.01(o) states that "...sometimes in amending the claims or in adding new claims, new terms are introduced that do not appear in the specification...". (See arguments and additional citations set forth above.) Therefore, if the Examiner objects to the inclusion of these terms in the specification, it is requested that the Examiner not reject the claims for lack of antecedent

basis since these terms are inherently supported by the original disclosure. Rather, Applicant will remove these terms from the specification if required. In any case, Applicant respectfully requests that the rejection of claims 87-325 under 35 U.S.C. § 112, first paragraph be withdrawn.

Rejection Under 35 U.S.C. § 112, Second Paragraph:

Claims 99-101, 147-149, 195-197, 225, 226, 227, 228, 231-260, 265, 281, 297, 310, 311 and 313-326 stand rejected by the Examiner under 35 U.S.C. 112. However, for reasons set forth below this rejection is improper and should be withdrawn. Therefore, Applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 112 be withdrawn, and a new Office action allowing all of the claims be sent.

The rejection under 112, second paragraph includes a reference to the term of art “PVC” (pigment volume concentration), which clearly cannot be confused with “poly vinyl chloride” when taken in the context of the present application. The Office asserts that the Applicant is attempting to exert his right to be his own lexicographer, and that he fails to define a term used contrary to its regularly applied definition. However, the Applicant is not attempting to define a term contrary to that which is already well known in the art of paint formulation. Terms often have more than one meaning, and the particular meaning is implied by a context in which the term is used. This is the case with “PVC”. Since the term “PVC” has another regularly known definition in the paint arts, Applicant is not required to define the term. (See discussion below and the section titled “PVC” in the response to the rejection under 112 first paragraph above.)

As noted above, the indefiniteness rejection refers to the term of art “PVC” (pigment volume concentration), which clearly cannot be confused with “poly vinyl chloride” when taken in the context of the present application. The ‘537 patent to Friel has a definition for PVC in column 5, lines 29-40. This definition was not invented by Friel, but was well known in the art prior to the application filed by Friel et al, which issued as the ‘537 patent. Evidence of this fact is provided in Exhibit Z, Addendum attached hereto, as discussed in the

response to the rejection under 35 U.S.C. 112, first paragraph in the section labeled “PVC” above. The copies from a web page describe a book published in 1979 that discusses PVC at length. Therefore, PVC was well known at the time of the invention and its recitation should not be considered unclear or indefinite based on any lack of knowledge by those of ordinary skill in the paint arts.

Furthermore, as discussed above, PVC is simply a ratio of volumes in a composition. Therefore, by knowing the densities of the constituents of the composition, one of ordinary skill can easily convert weight percentages to PVC (pigment volume concentration) or PVC to weight percentages without loss of meaning. Thus, support for PVC is inherently provided by the disclosure of weight percentages in the original application of the ‘145 patent to McClain since it is simply a matter of choice of units for expressing ratios or percentages in similar premixed compositions. Therefore, the term “PVC” is considered to be clear and definite and has been left in the claims.

Therefore, it is requested that the rejection of these claims under 35 U.S.C. § 112, Second paragraph be withdrawn, and that the remaining claims be allowed.

Rejections under 35 U.S.C. §103

To establish a *prima facie* case of obviousness under 35 U.S.C. §103, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based upon the Applicants' disclosure. A failure to meet any one of these criteria is a failure to establish a *prima facie* case of obviousness. MPEP §2143.

Claims 207-212, 232-234, 237, 243, 244, 301-303, 306, 313, 314, 316, 319, 320 and 327 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tsuei (U.S. Patent No.

5,643,669, hereinafter “Tsuei”). Applicants respectfully traverse this rejection and request reconsideration of the claims.

In particular, claims 87-260, 286-300, 302, 308, 311, 314, 316-318, and 320-326 have been canceled. Thus, only claims 301, 303, 306, 313, 319, and 327 of the claims rejected under 35 U.S.C. 103 remain in the application.

Each of the independent claims 301, 313, and 327 among the claims rejected for obviousness recites combinations of "prepaints" or "premixed compositions". As explained in the Request for Interference, page 55, a "prepaint" is a composition formed in a process prior to forming an actual functional paint and used in conjunction with other "prepaint" compositions in order to form a functional paint. Each of the prepaints, by themselves, is not intended to be paint, but becomes an integral part of the paint only after combination with other prepaints. In other words, at least two prepaints are mixed in order to create a functional paint product.

Tsuei teaches and suggests coating compositions that by themselves may be used as paints. Specifically, Tsuei teaches to form paints that are to be applied one layer at a time for the purpose of forming a multi-layered coating. Tsuei does not teach forming "prepaints" (premixed compositions) for the purpose of mixing one or more "prepaints" (premixed compositions) to form a functional paint product. The Examiner has relied upon the teaching of forming a paint (a functional paint product) of Tsuei in order to reject the prepaints (premixed compositions) of the present invention. The two ideas are not the same. Many conventional systems form paint and incorporate materials like those disclosed by Tsuei. However, Tsuei nor other prior art teaches forming the prepaints (premixed compositions) as separate stable compositions for the purpose of later formulating and mixing the prepaints (premixed compositions) to achieve any of a variety of qualities and sheens in a resulting functional paint. Nor is it obvious to form a limited number of prepaints (premixed compositions) from which to form functional paints at a point of sale, for example, in view of Tsuei or any other prior art. Tsuei does not teach to add other essential paint elements as a separate prepaint (premixed composition), but teaches to mix them all together to form the functional paint product for a respective layer in the coating to be applied. With reference to claim 301, for example, claim 301 recites “a premixed composition comprising: a pigment; a

dispersant, a thickener; and water; wherein the dispersant and the thickener are stable when mixed with the pigment and with other paint contents.” Thus, Tsui does not have the claimed elements of a pigment prepaint or premixed pigment composition that is to be combined with other ingredients in order to create actual functional paint. Tsui also does not anticipate or make obvious the inventions recited in the present claims of which the pigment prepaint composition of claim 208 is exemplary. That is, in order to create paint and for that paint to be useful as a paint product for the layers taught by Tsui, addition of other components would be required beyond the recitation of claim 208. This is considered to be so because claim 208 defines a prepaint composition “consisting essentially of” specific components. This limiting recitation is in most of the current claims, and is not taught by Tsui. Furthermore, because each of the individual independent claims rejected for obviousness similarly recite prepaints or premixed compositions, they are not obvious in light of the teachings and suggestions of Tsuei.

Each of the respective dependent claims are considered to be allowable over Tsuei for depending from allowable independent claims and for other patentable features therein as may be appreciated by the Examiner.

Accordingly, Applicants respectfully request that the obviousness rejections of claims 207-212, 232-234, 237, 243, 244, 301-303, 306, 313, 314, 316, 319, 320 and 327 be withdrawn.

Indication of Condition for Allowance

Applicant wishes to thank the Examiner for the indication allowable subject matter. That is, some of the claims were rejected only under 35 U.S.C. § 112, Second Paragraph. Therefore, by overcoming the definiteness rejection at least these claims will be allowable. Furthermore, based on the current amendments and remarks regarding the rejections under 35 U.S.C. § 112, First Paragraph above, these claims are also considered to be allowable. Still further, it is believed that when the Examiner comes to appreciate the value of producing paint from a limited number of prepaints, unlike the paint of Tsuei, the remaining claims will also be

allowable. By thus overcoming the rejections for the above referenced application, it is asserted that the entire application is allowable. Applicant believe that all formal matters have been resolved, that the application is in condition for allowance, and respectfully request the same.

CONCLUSION

Applicant respectfully requests that a timely Notice of Allowance be issued in this case so that the Interference Request may be granted.

It is requested that a three-month extension of time be granted for the filing of this response, and the appropriate extension filing fee of \$510 is enclosed herewith.

An information disclosure statement is being filed together with the required fee of \$180.

The amendments herein added no new claims, resulting in no additional fees due.

If any fees, including extension of time fees or additional claims fees, are due as a result of this response, please charge Deposit Account No. 19-0513. This authorization is intended to act as a constructive petition for an extension of time, should an extension of time be needed as a result of this response. The examiner is invited to telephone the undersigned if this would in any way advance the prosecution of this case.

Respectfully submitted,

Date: March 21, 2006

By 
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Friel '537 PATENT CLAIMS and Friel '405 APPLICATION CLAIMS (application claims indicated by the letter "A" preceding the claim number.)	CORRESPONDING CLAIM/COUNT IN CURRENT APPLICATION claims indicated by the letter "A" preceding the claim number.)	BASIS FOR CONSTRUCTIVE REDUCTION TO PRACTICE AND WRITTEN DESCRIPTION IN APPLICANT'S ORIGINAL SPECIFICATION OF U.S. PATENT 6,221,145 (hereinafter '145 patent)
	<p>Claim 89. (currently amended) A plurality of varied, but stable fluid prepaints, sufficient to form a variety of paint compositions, which plurality comprises:</p> <p>Claims 1 and A1. A set of different, but mutually compatible fluid prepaints, sufficient to form at least one paint line, which set comprises:</p>	<p>The term "variety of paint compositions" is supported by disclosure in column 2, line 30. The term "plurality of varied" is supported by a disclosure in the '145 patent in column 3, lines 41-44 and column 4, lines 14-17 that indicates that each resin composition can be varied. Furthermore, the disclosure of the different constituent ingredients of each prepaint set forth in columns 2, line 15 through column 3, line 67 make it clear that each prepaint is different or varies from the others.</p> <p>The term "prepaints" is supported by the context of the overall disclosure and in particular by "premixed compositions" as disclosed in the Abstract and in column 2, lines 14-15. The nomenclature</p>

“prepaint” was incorporated into the specification of the present application by the amendment to the paragraph starting on line 11 of page 2 and the paragraph starting on line 15 of page 3 filed October 7, 2003, which amendment was entered by the Patent Office as indicated by the next Office action dated July 15, 2004. The terms “stable” and “fluid” are supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 1 of the Friel Patent. The term “compatible” is found in the Tsuei reference cited by the Examiner (U.S. Patent 5,643,669). Tsuei explains at col. 6, lines 20-26, “‘compatible’ means that the component does not cause adverse affects to the curable composition (e.g. precipitation, flocculation, or other separation of the components), or to the cured coating (e.g., disruption of film continuity, phase separation, or loss of adhesion to

	<p>the backing)." This is a conventional meaning for the term as it is used in the paint art. The term "mutually" compatible means the components are compatible with each other. Applicant described its prepaints as being "stable" in the priority document patent to McClain ('145) at column 1, lines 41-44 and lines 64-66; column 2, lines 15-18, and column 3, lines 49-51. This definition is consistent with the definition of "compatible" set forth above. It is also consistent with the meaning of "stable". The term "fluid" is found in the original disclosure in column 3, line 52. The original disclosure describes the compositions as "aqueous" as in column 1, lines 47-48; column 2, lines 1-3 and lines 59-67; and column 3, lines 6-7. The term "aqueous" means of relating to or resembling water. Thus, the disclosure of "aqueous" compositions together with the disclosure of causing the compositions to flow by a "fluid" pump supports the recitation of "fluid" with reference to the prepaints of claim 89.</p>	<p>Column 1, lines 54-67; and column 2, lines 24-67, describe the make up of a pigment composition with an example including the pigment, titanium dioxide. (See column 2, lines 24-27 and lines 30-33.) Since a pigment is a substance such as titanium dioxide added to a paint, it would inherently follow that the added substance would block light and thus provide the property to opacify. Column 1, line 27 states that "The pigment composition is a composition with a high percentage of solids suspended in water." Solids in suspension inherently opacify.</p>
(i) at least one pigment opacifying prepaint comprising at least one opacifying pigment;	(i) at least one pigment prepaint composition comprising a pigment;	

	<p>(ii) at least one extender prepaint comprising at least one extender pigment; and</p> <p>(iii) at least one binder prepaint comprising at least one latex polymeric binder.</p>	<p>The term "low resin" is supported by column 3, line 29-30. The low resin prepaint composition of the '145 patent has similar contents to those of the extender prepaint of Friel claim 1. Column 2, lines 30-37 discloses a mixture of calcined clay and silica. Column 3, lines 30-32 disclose diatomaceous earth. Column 3, lines 33-35 discloses ground limestone and calcined clay. Friel discloses that the extender pigments include calcium carbonate (limestone), silica and others similar to Applicant. Column 3, lines 29-38 support clay, ground limestone, and silica. Silica is a primary constituent of diatomaceous earth, which term "silica" is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of "extender pigment".)</p> <p>(iii) at least one binder prepaint comprising a resinous binder.</p>	<p>Binder prepaint composition is supported by the original disclosure of the terms: "high resin content binder", "high resin component", and "high resin composition" used interchangeably in column 1, lines 50-51; column 2, lines 5-6; and column 3, lines 39-48. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resinous binder. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.)</p>
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<p>Claims 2 and A2. The set of prepaints of claim 1, wherein the number of prepaints is from 3 to 15.</p>	<p>Claim 92. (currently amended) The plurality of prepaints of claim 89, wherein the number of prepaints is 3 or more.</p> <p>Column 4, lines 46-51 discloses prepaints or premixed compositions including a pigment composition, and one or more of: a dispersant thickening agent, a high resin content binder, a low resin content binder, and mixtures thereof mixed with the pigment composition. This recitation suggests no upper limit to the number of additional prepaints or premixed compositions that can be mixed with the pigment prepaint. Column 3, lines 56-58 and lines 61-63; and first and third rows of the table of column 4, lines 6-13 disclose the specific number of three prepaints.</p>
<p>Claims 3 and A3. The set of prepaints of claim 1, wherein the opacifying prepaint further comprises at least one particulate polymeric binder adsorbed onto the opacifying pigment.</p>	<p>Claim 95. (currently amended) The plurality of prepaints of claim 89, wherein the pigment prepaint composition further comprises at least one particulate resinous binder adsorbed onto the pigment.</p> <p>Column 2, line 67 to column 3, line 3 discloses the resinous binder. The resinous binder inherently adsorbs onto the pigment when the resinous binder comes into contact with the pigment in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having “no discernable settling” in column 2, line 67. This disclosure suggests the inherent property of the resinous binder. (One of the inherent material properties of the resinous binder “6183 made by BASF” is that it is particulate. This binder is disclosed in column 3, line 46.)</p>

<p>Claims 4 and A4. The set of prepaints of claim 1, wherein the extender prepaint further comprises at least one particulate polymeric binder absorbed onto the extender pigment.</p>	<p>Claim 98. (currently amended) The plurality of prepaints of claim 89, wherein at least one of the prepaint compositions further comprises at least one particulate resinous binder absorbed onto the at least one of the calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof.</p>	<p>Column 2, lines 6-8 and column 3, lines 29-30 disclose the resinous binder. The resinous binder inherently adsorbs onto the pigments when the resinous binder comes into contact with the pigments in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having "no discernable settling" in column 2, line 67. This disclosure suggests the inherent property of the resinous binder. (One of the inherent material properties of the resinous binder "6183 made by BASF" is that it is particulate. This binder is disclosed in column 3, line 46.)</p>
	<p>Claim 101. (currently amended) The plurality of prepaints of claim 89, wherein at least one of the prepaint compositions has a PVC of about 35% to about 100%.</p>	<p>A pigment solids content (PVC) of the low resin composition is in the range from about 35% to about 100%, is supported by the original disclosure of the '145, column 3, lines 40-43 which discloses that the binder resin content, (and thus the PVC), "can be varied" as desired so that the PVC content can be placed within the claimed range from 35% to 100%.</p> <p>It can be shown that each of the other prepaint compositions has a PVC that falls in the claimed range by the common engineering practice of conversion of weight percentages to volumes and a calculation in accordance with the well known definition of PVC:</p> $\text{PVC} = (\text{volume of pigments} + \text{volume of the extenders}) / (\text{volume of pigments} + \text{volume of the extenders} + \text{volume of the binders}) \text{ (See U.S. Patent No. 6,531,537, column 7, lines 36-39.)}$

<p>Claims 38 and A44. A paint line produced by a process which comprises the steps of:</p>	<p>Claim 104. (currently amended) A plurality of paint products produced by a process which comprises the steps of :</p> <p>The plurality of paint products or a paint line is supported at column 1, lines 47-54; column 2, lines 14-18; column 3, lines 55-67; and column 4, lines 1-13.</p>
<p>a. providing a set of different, but mutually compatible, fluid prepaints, which set comprises:</p> <p>(a) providing a plurality of varied, but stable fluid prepaints, which plurality comprises;</p>	<p>The term “plurality of varied” is supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13, and further in light of a disclosure indicating that the prepaints can be varied in column 3, lines 41-44 and column 4, lines 14-17. The term “prepaints” is supported by the context of the overall disclosure and in particular by “premixed compositions” as disclosed in the Abstract and in column 2, lines 14-15. The nomenclature “prepaint” was incorporated into the specification of the present application by the amendment to the paragraph starting on line 11 of page 2 and the paragraph starting on line 15 of page 3 filed October 7, 2003, which amendment was entered by the Patent Office as indicated by the next Office action dated July 15, 2004. The terms “stable” and “fluid” are supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67 and column 2, lines 65-67.</p> <p>Column 1, lines 49-50 and lines 59-67; and column 2, lines 20-67, detailing inclusion of water for an aqueous solution and pigments including a well known opacifying pigment, (titanium dioxide.)</p>
	<p>(i) at least one pigment opacifying prepaint comprising at least one opacifying pigment,</p> <p>(i) at least one pigment prepaint composition comprising a pigment;</p>

<p>(ii) at least one extender prepaint comprising at least one extender pigment, and</p>	<p>(ii) at least one low resin prepaint composition, at least one of the prepaint compositions comprising at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof;</p>	<p>Column 2, lines 6-8, which make clear that the low resin composition includes water for an aqueous solution. Column 3, lines 29-38 support clay, limestone, and silica. Silica is a primary constituent of diatomaceous earth, which term “silica” is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of “extender pigment”.)</p>
	<p>(iii) at least one binder prepaint comprising at least one latex polymeric binder; and</p>	<p>Binder prepaint composition is supported by the original disclosure of the terms: “high resin content binder”, “high resin component”, and “high resin composition” used interchangeably in column 1, lines 50-51; column 2, lines 5-6; and column 3, lines 39-48. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resinous binder. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.)</p>
	<p>b. dispensing a predetermined amount of each of the prepaint compositions into containers to form the paint line.</p>	<p>Dispensing a predetermined amount of each of the prepaint compositions into containers is supported at column 3, lines 51 through 55. Dispensing the prepaint compositions in the container and mixing is recited in Column 3, lines 25-29 and Column 4, lines 52-53, and results in forming one of the aqueous paint products of the plurality of paint products or paint line shown and described from column 3, line 56 to column 4, line 13.</p>

Claim 45. A set of different, but mutually compatible, fluid prepaints sufficient to formulate at least one paint line useful for forming pigmented and clear coatings, which set comprises:	<p>Claim 107. (Currently amended) A plurality of different but stable fluid prepaints sufficient to formulate a plurality of paint products useful for forming pigmented coatings, which plurality of prepaints comprises:</p>	<p>The term “plurality of different” with reference to the prepaints and the term “plurality of paint products” or a paint line are supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13, and further in light of a disclosure of the different constituent ingredients and percentages for each of the prepaint compositions. (See columns 2 and 3.) The term “prepaints” is supported by the context of the overall disclosure and in particular by “premixed compositions” as disclosed in the Abstract and in column 2, lines 14-15. The nomenclature “prepaint” was incorporated into the specification of the present application by the amendment to the paragraph starting on line 11 of page 2 and the paragraph starting on line 15 of page 3 filed October 7, 2003, which amendment was entered by the Patent Office as indicated by the next Office action dated July 15, 2004. The terms “stable” and “fluid” are supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67 and column 2, lines 65-67. Friel’s recitation of “clear coatings” attempts to obtain patent coverage for a desired result and does not provide a structural difference. (See MPEP 2111.02(II).) Therefore, the omission of “clear coatings” in Applicant’s claim 7 has the same or similar scope as does Friel’s claim 45.</p>
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<p>(i) at least one prepaint comprising at least one opacifying pigment; and</p>	<p>(i) at least one prepaint composition having a pigment;</p> <p>(ii) at least two prepaints each of which comprises at least one latex polymeric binder</p>	<p>Column 1, lines 49-50 and lines 59-67; and column 2, lines 20-67, describe the make up of a pigment composition with an example including the pigment, titanium dioxide. (See column 2, lines 24-27 and lines 30-33.) Since a pigment is a substance such as titanium dioxide added to a paint, it would inherently follow that the added substance would block light and thus provide the property to opacity. Column 1, line 27 states that “The pigment composition is a composition with a high percentage of solids suspended in water.” Solids in suspension inherently opacity.</p> <p>Two binder prepaint compositions is supported by disclosure of a “high resin content binder and a low resin content binder” in column 1, lines 50-51. Column 3, lines 29-30 and lines 39-40 makes clear that the high and low resin compositions are aqueous compositions. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form latex polymeric binders.)</p>	
	<p>Claim 48. A method of forming at least one paint line, which method comprises the steps of:</p> <p>(a) providing the set of prepaints of Claim 45, 46 or 47; and</p>	<p>Claim 110. (currently amended) A method of forming a plurality of paint products, which method comprises the steps of:</p> <p>(a) providing a plurality of the prepaint compositions of claim 107; and</p>	<p>The term “plurality of paint products” or a paint line is supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13.</p> <p>The prepaint compositions are supported as set forth above with regard to Claim 107.</p>

<p>(b) dispensing a predetermined amount of each of the prepaints into containers or applicators to form the paint line.</p>	<p>(b) dispensing a predetermined amount of each of the prepaint compositions into containers to form the plurality of paint products.</p>
	<p>Dispensing a predetermined amount of each of the prepaint compositions into containers is supported at column 3, lines 51 and 55. Dispensing the prepaint compositions in the container and mixing is recited in Column 3, lines 25-29 and Column 4, lines 52-53, and results in forming one of the aqueous paint products of the plurality of paint products or paint line shown and described from column 3, line 56 to column 4, line 13.</p>

Friel '537 PATENT CLAIMS and Friel '405 APPLICATION CLAIMS (application claims indicated by the letter "A" preceding the claim number.)	CORRESPONDING CLAIM/COUNT IN CURRENT APPLICATION (Method of Producing a Paint Line)	BASIS FOR CONSTRUCTIVE REDUCTION TO PRACTICE AND WRITTEN DESCRIPTION IN APPLICANT'S ORIGINAL SPECIFICATION OF U.S. PATENT 6,221,145 (hereinafter '145 patent)
Claims 5 and A5. A method of forming at least one paint line, comprising the steps of:	Claim 113. (currently amended) A method of forming a plurality of paint products comprising the steps of:	The term "plurality of paint products" or a paint line is supported by the '145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13.

<p>(a) providing a set of different, but mutually compatible, fluid prepaints, comprising:</p>	<p>The term “plurality of varied” is supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13, and further in light of a disclosure indicating that the prepaints can be varied in column 3, lines 41-44 and column 4, lines 14-17. The term “prepaints” is supported by the context of the overall disclosure and in particular by “premixed compositions” as disclosed in the Abstract and in column 2, lines 14-15. The nomenclature “prepaint” was incorporated into the specification of the present application by the amendment to the paragraph starting on line 11 of page 2 and the paragraph starting on line 15 of page 3 filed October 7, 2003, which amendment was entered by the Patent Office as indicated by the next Office action dated July 15, 2004. The terms “stable” and “fluid” are supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67 and column 2, lines 65-67.</p>
<p>(i) at least one opacifying prepaint, comprising at least one opacifying pigment;</p>	<p>(i) at least one pigment prepaint composition comprising at least one pigment;</p> <p>Column 1, lines 49-50 and lines 59-67; and column 2, lines 20-67, describe the pigment prepaint composition having pigments including a well known opacifying pigment, (titanium dioxide.)</p>

ii) at least one extender prepaint comprising at least one extender pigment; and	<p>(ii) at least one low resin prepaint composition, at least one of the prepaint compositions comprising at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof;</p> <p>(iii) at least one binder prepaint comprising at least one latex polymeric binder; and</p>
	<p>Column 2, lines 30-37 discloses a mixture of calcined clay and silica. Column 3, lines 30-32 disclose diatomaceous earth. Column 3, lines 33-35 discloses ground limestone and calcined clay. Friel discloses that the extender pigments include calcium carbonate (limestone), silica and others similar to Applicant. Column 3, lines 29-38 support clay, ground limestone, and silica. Silica is a primary constituent of diatomaceous earth, which term “silica” is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of “extender pigment”.)</p> <p>Binder prepaint composition is supported by the original disclosure of the terms: “high resin content binder”, “high resin component”, and “high resin composition” used interchangeably in column 1, lines 50-51; column 2, lines 5-6; and column 3, lines 39-48. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resin containing binder. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.)</p>

<p>(b) dispensing a predetermined amount of each of the prepaints into containers or applicator(s) to form the paint line.</p>	<p>(b) dispensing a predetermined amount of each of the prepaint compositions into containers to form the plurality of paint products.</p>	<p>Dispensing a predetermined amount of each of the prepaint compositions into containers is supported at column 3, lines 51 through 55. Dispensing the prepaint compositions in the container and mixing is recited in Column 3, lines 25-29 and Column 4, lines 52-53, and results in forming one of the aqueous paint products of the plurality of paint products or paint line shown and described from column 3, line 56 to column 4, line 13.</p>
<p>Claims 7 and A7. The method of claim 5, further comprising the step of mixing the prepaint before, while, or after they are dispensed into the containers.</p>	<p>Claim 116. (currently amended) The method of claim 113, further comprising the step of mixing the prepaint compositions before, while, or after they are dispensed into the containers.</p>	<p>Column 4, lines 50-53 recite “and mixtures thereof” in support of mixing the prepaint compositions before, and “simultaneously or sequentially mixing” which supports mixing while and after the premixed compositions are dispensed into the containers. Also, Column 3, lines 63-67 disclose “balance between the components.” Column 3, lines 51-55 discloses “discharge into the point of sale container.” Column 3, lines 51-55 discloses that “each storage reservoir is coupled through fluid pumps and appropriate valving to dispensing outlets with the discharge therefrom being directed into the point of sale container.” The claim language “before during or after” contemplates all species in a genus of the time of mixture. Applicant’s disclosure covers the genus.</p>
<p>Claims 8 and A8. The method of claim 5, further comprising the step of mixing the prepaint before or while they are dispensed into the applicator(s).</p>	<p>Claim 119. (currently amended) The method of claim 113, further comprising the step of mixing the prepaint compositions before or while they are dispensed into the containers.</p>	<p>Column 4, lines 50-53 recite “and mixtures thereof” in support of mixing the prepaint compositions before, and “simultaneously or sequentially mixing” which supports mixing while the premixed compositions are dispensed into the containers. All “applicators” (see the Friel Claim 8), must necessarily include “containers”. Although all “containers” do not need to be “applicators” if is inherent that paint must be applied.</p>

<p>Claims 9 and A9. The method of claim 5, further comprising the step of adjusting the viscosity of the prepaints before, while, or after they are into the containers.</p>	<p>Claim 122. (currently amended) The method of claim 113, further comprising the step of adjusting the viscosity of the prepaint compositions before, while, or after they are dispensed into the containers.</p> <p>A viscosity controlling agent adjusts the viscosity of the pigment prepaint composition as set forth in column 2, lines 36-38. The viscosity of each of the prepaint compositions is adjusted by the addition of thickeners, dispersants, and/or coalescents before the prepaint compositions are dispensed into the containers when the prepaint compositions are formed as disclosed in column 4, line 40 for the pigment composition; column 3, lines 21-29 for the dispersant thickener composition; column 3, lines 34-37 for the low resin composition; and column 3, lines 40-41 for the high resin composition. The viscosity of each of the prepaint compositions is also adjusted by mixing the prepaint compositions with each other which may occur while the prepaints are being dispensed into the containers or after they are dispensed into the containers, which is supported by “simultaneously or sequentially mixing” as disclosed in Column 4, lines 51-52. (See claims 7 and 116 above.)</p>
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<p>Claims 10 and A10. The method of claim 5, further comprising the step of adjusting the viscosity of the dispensed prepaints before or while they are dispensed into the applicator(s).</p>	<p>Claim 125. (currently amended) The method of claim 113, further comprising the step of adjusting the viscosity of the prepaint compositions before or while they are dispensed into the containers.</p>	<p>A viscosity controlling agent adjusts the viscosity of the pigment prepaint composition as set forth in column 2, lines 36-38. The viscosity of each of the prepaint compositions is adjusted by the addition of thickeners, dispersants, and/or coalescents before the prepaint compositions are dispensed into the containers when the prepaint compositions are formed as disclosed in Column 4, line 40 for the pigment composition; Column 3, lines 21-29 for the dispersant thickener composition; Column 3, lines 34-37 for the low resin composition; and Column 3, lines 40-41 for the high resin composition. The viscosity of each of the prepaint compositions is also adjusted by mixing the prepaint compositions with each other which may occur while the prepaint compositions are being dispensed into the containers, which is supported by “simultaneously or sequentially mixing” recited in Column 4, lines 51-52. (Also see claims 8 and 119 above.)</p>	<p>Adding additives is supported by disclosure at column 2, lines 39-61; column 2, line 67 to column 3, line 3; column 3, lines 21-22; column 3, lines 34-37; and column 3, lines 40-41. The disclosed additives enhance application or final performance of the paint products.</p>
<p>Claims 11 and A11. The method of claim 5, further comprising the step of adding at least one additive that enhances application or final performance of the paint.</p>	<p>Claim 128. (previously presented) The method of claim 113, further comprising the step of adding at least one additive that enhances application or final performance of the paint products.</p>	<p>Thickeners are added as set forth in column 2, lines 2, 45, 57; column 3, lines 10, 12, 17, 35-36; and claim 1, column 4, line 33, and claim 4, line 58.</p>	

<p>Claims 14 and A14. The method of claim 5, further comprising the step of adding at least one colorant to the prepaints.</p>	<p>Claim 134. (Currently amended) The method of claim 113, further comprising the step of adding at least one colorant to the prepaint compositions.</p> <p>Adding at least one colorant is supported by disclosure of the well known step of providing neutral or base color in column 1, lines 11-12. The colorant may be added to the prepaint compositions whether they have been mixed to form a paint product or not. The steps of adding the various pigments as set forth in column 2, lines 25-27 and lines 32-34; and column 3, lines 30-34 also include the step of adding a colorant to the prepaint compositions.</p>
<p>Claims 15 and A15. The method of claim 5, wherein the opacifying prepaint further comprises at least one particulate polymeric binder absorbed onto the opacifying pigment.</p>	<p>Claim 137. (Currently amended) The method of claim 113, wherein the pigment prepaint composition further comprises at least one particulate resin absorbed onto the pigment.</p> <p>Column 2, line 67 to column 3, line 3 discloses the resinous binder. The resinous binder inherently adsorbs onto the pigment when the resinous binder comes into contact with the pigment in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having “no discernable settling” in column 2, line 67. This disclosure suggests the inherent property of the resinous binder. (One of the inherent material properties of the resinous binder “6183 made by BASF” is that it is particulate. This binder is disclosed in column 3, line 46.)</p>

Claims 16 and A16. The method of claim 5, wherein the extender prepaint further comprises at least one particulate polymeric binder absorbed onto the extender pigment.	Claim 140. (Currently amended) The method of claim 113, wherein at least one of the prepaint compositions further comprises at least one particulate resin binder absorbed onto the at least one of the calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof.	Column 2, lines 6-8 and column 3, lines 29-30 disclose the resinous binder. The resinous binder inherently adsorbs onto the pigments when the resinous binder comes into contact with the pigments in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having “no discernable settling” in column 2, line 67. This disclosure suggests the inherent property of the resinous binder. (One of the inherent material properties of the resinous binder “6183 made by BASF” is that it is particulate. This binder is disclosed in column 3, line 46.)
Claims 17 and A17. The method of claim 5, wherein the method is carried out at a paint manufacturing facility.	Claim 143. (previously presented) The method of claim 113, wherein the method is carried out at a paint manufacturing facility.	Column 1, lines 23-25 discloses the “manufacture of p[a]int at the central facility” as a known step. However, the paint manufacturing facility at which paint in accordance with the present invention will typically be manufactured is at the point of sale as indicated in Column 1, lines 47-49; Column 2, lines 8-10; Column 3, lines 6-8; and Column 4, lines 1-3.

<p>Claims 18 and A21. The method of claim 5, wherein the number of prepaints is from 4 to 15.</p>	<p>Claim 146. (Currently amended) The method of claim 113, wherein the number of prepaint compositions is 4 or more.</p> <p>Column 4, lines 46-51 discloses prepaints or premixed compositions including a pigment composition, and one or more of: a dispersant thickening agent, a high resin content binder, a low resin content binder, and mixtures thereof mixed with the pigment composition. This recitation suggests no upper limit to the number of additional prepaints or premixed compositions that can be mixed with the pigment prepaint. This disclosure also explicitly lists four premixed compositions and the possibility of more premixed compositions formed by mixing the first four. Column 3, lines 56-61; and the second row of the table of column 4, lines 6-13 disclose the specific number of four prepaints.</p>
<p>Claim 50. The method of forming at least one paint line of claim 5 wherein the extender prepaint has a PVC of about 35% to about 100%.</p>	<p>Claim 149. (Currently amended) The method of forming a plurality of paint products of claim 113, wherein at least one of the prepaint composition has a PVC of about 35% to about 100%.</p> <p>A pigment solids content (PVC) of the low resin composition is in the range from about 35% to about 100%, is supported by the original disclosure of the '145, column 3, lines 40-43 which discloses that the binder resin content, (and thus the PVC), "can be varied" as desired so that the PVC content can be placed within the claimed range from 35% to 100%.</p> <p>It can be shown that each of the other prepaint compositions has a PVC that falls in the claimed range by the common engineering practice of conversion of weight percentages to volumes and a calculation in accordance with the well known definition of PVC:</p> $\text{PVC} = (\text{volume of pigments} + \text{volume of the extenders}) / (\text{volume of pigments} + \text{volume of the extenders} + \text{volume of the binders}) \text{ (See U.S. Patent No. 6,531,537, column 7, lines 36-39.)}$

<p>(Friel Application ‘405) Claim A18. The method of claim 5 or claim 6, wherein the method is carried out at a point-of-sale.</p>	<p>Claim 152. (previously presented) The method of claim 113, wherein the method is carried out at the point-of-sale.</p>	<p>The method of manufacturing paint in accordance with the present invention will typically be carried out at the point of sale as indicated in Column 1, lines 47-49; Column 2, lines 8-10; Column 3, lines 6-8; and Column 4, lines 1-3.</p>
<p>(Friel Application ‘405) Claim A19. The method of claim 5 or claim 6, wherein the method is carried out at a point-of-use.</p>	<p>Claim 155. (previously presented) The method of claim 113, wherein the method is carried out at the point-of-use.</p>	<p>The term of “use” is supported by the original disclosure in column 1, lines 50-54. Point-of-use is inherently supported by the original disclosure of the ‘145 patent in which “use” of the premixed compositions or prepaints for making a paint product frequently indicates a location of use. Using the premixed compositions in accordance with the present invention occurs at the “point” of sale, which is inherently a “point-of-use” since the premixed compositions or prepaints are being used to manufacture the paint. (See the disclosure in the ‘145 patent in Column 1, lines 47-49; Column 2, lines 8-10; Column 3, lines 6-8; and Column 4, lines 1-3.) (Note that there is no definition of “point-of use” by Friel. See the request for Interference, page 64, lines 13-27.)</p>

<p>(Friel Application '405) Claim A20. The method of claim 5 or claim 6, wherein the method is controlled by a computer.</p>	<p>Claim 158. (previously presented) The method of claim 113, wherein the method is controlled by programmed dispensing.</p>	<p>The Friel application claim A20 term "controlled by a computer" of claims 156, 157, and 158 is supported by the original disclosure of column 4, lines 1-13 of the Applicant's patent. On line 1, the Applicant statement that the "compositions [are] suitable for programmed dispensing" refers to computer controlled dispensing as is evidenced by the precise weight percentages required in the Table of lines 6-13. The '145 patent does not explicitly have the word "computer". Therefore, "a computer" has been replaced by the term "programmed dispensing".</p>
	<p>Claim 6. A method of forming a range of paints, the range comprising at least two paint lines, which method comprises the steps of:</p>	<p>Claim 161. (Currently amended) A method of forming a range of paint products, the range comprising variations in the plurality of the paint products:</p> <p>The term "range" in reference to paints is supported in column 1, lines 47-49. The term "paint products" is supported in column 2, lines 61-65 in which is disclosed that the present invention enables a wide scope of paint products. The term "variations" is supported by disclosure in the original disclosure of the '145 patent at column 4, lines 14-17. The term "plurality of paint products" or a paint line is supported by the '145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13. Similar terminology that may be used interchangeably includes "variety of paint compositions" which is supported by disclosure in column 2, line 30. The term "plurality of varied" and the idea of plural paint lines as recited in Friel's claim 6 is supported by a disclosure in the '145 patent in column 3, lines 41-44 and column 4, lines 14-17 that indicates that each resin composition can be varied.</p>

<p>(a) providing a set of different, but mutually compatible, fluid prepaints sufficient to formulate at least two paint lines, which set comprises:</p>	<p>(a) providing a plurality of varied, but stable fluid prepaints sufficient to formulate the plurality of varied paint products, which plurality of fluid prepaints comprises:</p> <p>The disclosure of the different constituent ingredients of each prepaint set forth in columns 2, line 15 through column 3, line 67 makes it clear that each prepaint is different or varies from the others. The term “prepaints” is supported by the context of the overall disclosure and in particular by “premixed compositions” as disclosed in the Abstract and in column 2, lines 14-15. The terms “stable” and “fluid” are supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67 and column 2, lines 65-67. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 6 of the Friel Patent. (See the explanation of how “stable” encompasses “mutually compatible” with respect to claims 1 and 89 above.)</p>
<p>(i) at least one opacifying prepaint comprising at least one opacifying pigment;</p>	<p>(i) at least one pigment prepaint composition comprising a pigment;</p> <p>Column 1, lines 49-50 and lines 59-67; and column 2, lines 20-67, describe the make up of a pigment composition with an example including the pigment, titanium dioxide. (See column 2, lines 24-27 and lines 30-33.) Since a pigment is a substance such as titanium dioxide added to a paint, it would inherently follow that the added substance would block light and thus provide the property to opacify. Column 1, line 27 states that “The pigment composition is a composition with a high percentage of solids suspended in water.” Solids in suspension inherently opacify.</p>

<p>(ii) at least one extender prepaint comprising at least one extender pigment;</p>	<p>(ii) at least one low resin prepaint, at least one of the prepaint compositions comprising at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof;</p>	<p>Column 2, lines 30-37 discloses a mixture of calcined clay and silica. Column 3, lines 30-32 disclose diatomaceous earth. Column 3, lines 33-35 disclose ground limestone and calcined clay. Friel discloses that the extender pigments include calcium carbonate (limestone), silica and others similar to Applicant. Column 3, lines 29-38 support clay, ground limestone, and silica. Silica is a primary constituent of diatomaceous earth, which term “silica” is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of “extender pigment”.)</p>
<p>(iii) at least one binder prepaint comprising at least one latex polymeric binder; and</p>	<p>(iii) at least one binder prepaint composition comprising a resin containing binder; and</p>	<p>Binder prepaint composition is supported by the original disclosure of the terms: “high resin content binder”, “high resin component”, and “high resin composition” used interchangeably in column 1, lines 50-51; column 2, lines 5-6; and column 3, lines 39-48. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resin containing binder. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.)</p>

<p>(iv) at least one additional, different pigment, low resin, or high resin prepaint composition selected from the group consisting of (i), (ii), and (iii) and mixtures thereof; and</p>	<p>The term “additional” is supported at Column 3, lines 6-8. Support for varying the components used in the formulation of a paint product and the term “different” is provided by the original disclosure of the ‘145 patent at Column 3, lines 41-44 which indicates that each resin composition can be varied to achieve different finish characteristics; and Column 3, lines 65-67 which states that “[t]he actual balances between the components for the different finishes can be varied in accordance with the needs of the purchaser for a particular type of finish.” Support for an additional, different prepaint composition is further provided in Column 4, lines 46-51 which discloses that each of the prepaint compositions listed in items (i)-(iii) and mixtures thereof may be combined to form the paint products. Disclosure of “mixtures thereof” provides the “at least one additional, different pigment, low resin, or high resin prepaint composition” since any mixture of the prepaint compositions listed in Column 4, lines 46-51 will necessarily provide an “additional” and “different” prepaint composition.</p>
<p>(b) dispensing a predetermined amount of each of the prepaints into containers or applicator(s) to form the range of paints.</p>	<p>(b) dispensing a predetermined amount of each of the prepaint compositions into containers is supported at column 3, lines 51 through 55. Dispensing the prepaint compositions in the container and mixing is recited in Column 3, lines 25-29 and Column 4, lines 52-53, and results in forming one of the aqueous paint products of the plurality of paint products or paint line shown and described from column 3, line 56 to column 4, line 13.</p>

Claims 7 and A7. The method of claim 5, further comprising the step of mixing the prepaint before, while, or after they are dispensed into the containers.	Claim 164. (Currently amended) The method of claim 161, further comprising the step of mixing the prepaint compositions before, while, or after they are dispensed into the containers.	<p>Column 4, lines 50-53 recite “and mixtures thereof” in support of mixing the prepaint compositions before, and “simultaneously or sequentially mixing” which supports mixing while and after the premixed compositions are dispensed into the containers. Also, Column 3, lines 63-67 disclose “balance between the components.” Column 3, lines 51-55 discloses “discharge into the point of sale container.” Column 3, lines 51-55 discloses that “each storage reservoir is coupled through fluid pumps and appropriate valving to dispensing outlets with the discharge therefrom being directed into the point of sale container.” The claim language “before during or after” contemplates all species in a genus of the time of mixture.</p> <p>Applicant’s disclosure covers the genus.</p>	<p>Column 4, lines 50-53 recite “and mixtures thereof” in support of mixing the prepaint compositions before, and “simultaneously or sequentially mixing” which supports mixing while the premixed compositions are dispensed into the containers. All “applicators” (see the Friel Claim 8), must necessarily include “containers”. Although all “containers” do not need to be “applicators” if is inherent that paint must be applied.</p>
Claims 8 and A8. The method of claim 5, further comprising the step of mixing the prepaint before or while they are dispensed into the applicator(s).	Claim 167. (Currently amended) The method of claim 161, further comprising the step of mixing the prepaint compositions before or while they are dispensed into the containers.		

<p>Claims 9 and A9. The method of claim 5, further comprising the step of adjusting the viscosity of the prepaints before, while, or after they are into the containers.</p>	<p>Claim 170. (Currently amended) The method of claim 161, further comprising the step of adjusting the viscosity of the prepaint compositions before, while, or after they are dispensed into the containers.</p> <p>A viscosity controlling agent adjusts the viscosity of the pigment prepaint composition as set forth in column 2, lines 36-38. The viscosity of each of the prepaint compositions is adjusted by the addition of thickeners, dispersants, and/or coalescents before the prepaint compositions are dispensed into the containers when the prepaint compositions are formed as disclosed in column 4, line 40 for the pigment composition; column 3, lines 21-29 for the dispersant thickener composition; column 3, lines 34-37 for the low resin composition; and column 3, lines 40-41 for the high resin composition. The viscosity of each of the prepaint compositions is also adjusted by mixing the prepaint compositions with each other which may occur while the prepaints are being dispensed into the containers or after they are dispensed into the containers, which is supported by “simultaneously or sequentially mixing” as disclosed in Column 4, lines 51-52. (See claims 7 and 116 above.)</p>
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<p>Claims 10 and A10. The method of claim 5, further comprising the step of adjusting the viscosity of the dispensed prepaints before or while they are dispensed into the applicator(s).</p>	<p>Claim 173. (Currently amended) The method of claim 161, further comprising the step of adjusting the viscosity of the prepaint compositions before or while they are dispensed into the containers.</p> <p>A viscosity controlling agent adjusts the viscosity of the pigment prepaint composition as set forth in column 2, lines 36-38. The viscosity of each of the prepaint compositions is adjusted by the addition of thickeners, dispersants, and/or coalescents before the prepaint compositions are dispensed into the containers when the prepaint compositions are formed as disclosed in Column 4, line 40 for the pigment composition; Column 3, lines 21-29 for the dispersant thickener composition; Column 3, lines 34-37 for the low resin composition; and Column 3, lines 40-41 for the high resin composition. The viscosity of each of the prepaint compositions is also adjusted by mixing the prepaint compositions with each other which may occur while the prepaint compositions are being dispensed into the containers, which is supported by “simultaneously or sequentially mixing” recited in Column 4, lines 51-52. (Also see claims 8 and 119 above.)</p>
<p>Claims 11 and A11. The method of claim 5, further comprising the step of adding at least one additive that enhances application or final performance of the paint.</p>	<p>Claim 176. (previously presented) The method of claim 161, further comprising the step of adding at least one additive that enhances application or final performance of the paint products.</p>
<p>Claims 13 and A13. The method of claim 11, wherein the additive is a thickener.</p>	<p>Claim 179. (previously presented) The method of claim 176, wherein the additive is a thickener.</p>

<p>Claims 14 and A14. The method of claim 5, further comprising the step of adding at least one colorant to the prepaints.</p>	<p>Claim 182. (Currently amended) The method of claim 161, further comprising the step of adding at least one colorant to the prepaint compositions.</p> <p>Adding at least one colorant is supported by disclosure of the well known step of providing neutral or base color in column 1, lines 11-12. The colorant may be added to the prepaint compositions whether they have been mixed to form a paint product or not. The steps of adding the various pigments as set forth in column 2, lines 25-27 and lines 32-34; and column 3, lines 30-34 also include the step of adding a colorant to the prepaint compositions.</p>
<p>Claims 15 and A15. The method of claim 5, wherein the opacifying prepaint further comprises at least one particulate polymeric binder absorbed onto the opacifying pigment.</p>	<p>Claim 185. (Currently amended) The method of claim 161, wherein the pigment prepaint composition further comprises at least one particulate resin absorbed onto the pigment.</p> <p>Column 2, line 67 to column 3, line 3 discloses the resinous binder. The resinous binder inherently adsorbs onto the pigment when the resinous binder comes into contact with the pigment in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having “no discernable settling” in column 2, line 67. This disclosure suggests the inherent property of the resinous binder. (One of the inherent material properties of the resinous binder “6183 made by BASF” is that it is particulate. This binder is disclosed in column 3, line 46.)</p>

<p>Claims 16 and A16. The method of claim 5, wherein the extender prepaint further comprises at least one particulate polymeric binder absorbed onto the extender pigment.</p>	<p>Claim 188. (Currently amended) The method of claim 161, wherein at least one of the prepaint compositions further comprises at least one particulate resin binder absorbed onto the at least one of the calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof.</p>	<p>Column 2, lines 6-8 and column 3, lines 29-30 disclose the resinous binder. The resinous binder inherently adsorbs onto the pigments when the resinous binder comes into contact with the pigments in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having “no discernable settling” in column 2, line 67. This disclosure suggests the inherent property of the resinous binder. (One of the inherent material properties of the resinous binder “61183 made by BASF” is that it is particulate. This binder is disclosed in column 3, line 46.)</p>	<p>Column 1, lines 23-25 discloses the “manufacture of p[a]int at the central facility” as a known step. However, the paint manufacturing facility at which paint in accordance with the present invention will typically be manufactured is at the point of sale as indicated in Column 1, lines 47-49; Column 2, lines 8-10; Column 3, lines 6-8; and Column 4, lines 1-3.</p>
<p>Claims 17 and A17. The method of claim 5, wherein the method is carried out at a paint manufacturing facility.</p>	<p>Claims 191. (previously presented) The method of claim 161, wherein the method is carried out at a paint manufacturing facility.</p>		

<p>Claims 18 and A21. The method of claim 5, wherein the number of prepaints is from 4 to 15.</p>	<p>Claim 194. (Currently amended) The method of claim 161, wherein the number of prepaint compositions is 4 or more.</p> <p>Column 4, lines 46-51 discloses prepaints or premixed compositions including a pigment composition, and one or more of: a dispersant thickening agent, a high resin content binder, a low resin content binder, and mixtures thereof mixed with the pigment composition. This recitation suggests no upper limit to the number of additional prepaints or premixed compositions that can be mixed with the pigment prepaint. This disclosure also explicitly lists four premixed compositions and the possibility of more premixed compositions formed by mixing the first four. Column 3, lines 56-61; and the second row of the table of column 4, lines 6-13 disclose the specific number of four prepaints.</p>
<p>Claim 50. The method of forming at least one paint line of claim 5 wherein the extender prepaint has a PVC of about 35% to about 100%.</p>	<p>Claim 197. (Currently amended) The method of forming a plurality of paint products of claim 161, wherein at least one of the prepaint compositions has a PVC of about 35% to about 100%.</p> <p>A pigment solids content (PVC) of the low resin composition is in the range from about 35% to about 100%, is supported by the original disclosure of the '145, column 3, lines 40-43 which discloses that the binder resin content, (and thus the PVC), "can be varied" as desired so that the PVC content can be placed within the claimed range from 35% to 100%.</p> <p>It can be shown that each of the other prepaint compositions has a PVC that falls in the claimed range by the common engineering practice of conversion of weight percentages to volumes and a calculation in accordance with the well known definition of PVC:</p> $\text{PVC} = (\text{volume of pigments} + \text{volume of the extenders}) / (\text{volume of pigments} + \text{volume of the extenders} + \text{volume of the binders}) \text{ (See U.S. Patent No. 6,531,537, column 7, lines 36-39.)}$

<p>(Friel Application '405) Claim A18. The method of claim 5 or claim 6, wherein the method is carried out at a point-of-sale.</p>	<p>Claim 200. (previously presented) The method of claim 161, wherein the method is carried out at the point-of-sale.</p>	<p>The method of manufacturing paint in accordance with the present invention will typically be carried out at the point of sale as indicated in Column 1, lines 47-49; Column 2, lines 8-10; Column 3, lines 6-8; and Column 4, lines 1-3.</p>
<p>(Friel Application '405) Claim A19. The method of claim 5 or claim 6, wherein the method is carried out at a point-of-use.</p>	<p>Claim 203. (previously presented) The method of claim 161, wherein the method is carried out at the point-of-use.</p>	<p>The term of "use" is supported by the original disclosure in column 1, lines 50-54. Point-of-use is inherently supported by the original disclosure of the '145 patent in which "use" of the premixed compositions or prepaints for making a paint product frequently indicates a location of use. Using the premixed compositions in accordance with the present invention occurs at the "point" of sale, which is inherently a "point-of-use" since the premixed compositions or prepaints are being used to manufacture the paint. (See the disclosure in the '145 patent in Column 1, lines 47-49; Column 2, lines 8-10; Column 3, lines 6-8; and Column 4, lines 1-3.) (Note that there is no definition of "point-of use" by Friel. See the request for Interference, page 64, lines 13-27.)</p>

Friel '537 PATENT CLAIMS and Friel '405 APPLICATION CLAIMS (application claims indicated by the letter "A" preceding the claim number.)	CORRESPONDING CLAIM/COUNT IN CURRENT APPLICATION	BASIS FOR CONSTRUCTIVE REDUCTION TO PRACTICE AND WRITTEN DESCRIPTION IN APPLICANT'S ORIGINAL SPECIFICATION OF U.S. PATENT 6,221,145 (hereinafter '145 patent)
Claims 19 and A22. A fluid opacifying prepaint useful for formulating a one pack, pigmented latex paint having a volume solids content of about 30% to about 70% and a Stormer viscosity of about 50 to about 250 KU, which prepaint contains other paint ingredients, which prepaint consists essentially of:	Claim 208. (currently amended) A fluid pigment prepaint composition useful for formulating a pigmented paint having a volume solids content of about 30% to about 70% and a Stormer viscosity of about 50 to about 250 KU, which pigment prepaint composition contains other paint ingredients, which pigment prepaint composition consists essentially of:	<p>The term "fluid" is supported by the original disclosure of the '145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67 and column 2, lines 65-67. (See Claims 1 and 89 for an explanation of how "prepaint" is supported in the original disclosure of the '145 patent. With regard to the Friel claim 19 term "one pack", Friel's disclosure fails to define this term. As such, it appears to have little or no meaning in the claims and has been omitted in corresponding claim 208 of the present application. The term "latex" is not explicitly recited in the original disclosure of the '145 patent, and has been omitted from claim 208. However, the paint described in the '145 patent is inherently a "latex" paint. This is so because the prepaint compositions are "fluid" based on the water component in each. (See column 2, lines 30-32; column 3, lines 10-12; column 3, lines 29-30; and column 3, lined 39-41.) Column 3, lines 39-48 also makes clear that the high resin component or binder prepaint is an aqueous composition. As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex paint. The volume solids content of a particular range is not explicitly described. However, Applicant's pigmented paint has been</p>

calculated to have a volume solids content of about 30% to about 70%. It should be noted that this range is very broad so as hardly to be a limitation. Although the relative quantities of the various ingredients are set forth in weight percentages in Applicant's original disclosure, these values can be converted to volume solids content and shown to reside in the claimed range based on weights and percentages shown in the table in column 4 and the maximum and minimum values of pigment and binder resin. (See column 2, lines 25-37 and column 3, lines 29-41.) The recited range of Stormer viscosity recited to be from 50 KU to 250KU is a broad range comparable to a range from the viscosity of water to that of hardened concrete. This range is considered to be met inherently since the materials in the pigment composition present in their suggested percentages will fall within this range of viscosity. Therefore, claims 207 and 208 are supported by the original disclosure of the Applicant's patent.

	<p>(i) at least one opacifying pigment,</p> <p>(ii) at least one dispersant,</p> <p>(iii) at least one thickener, and</p> <p>(iv) water;</p>	<p>The original disclosure of the ‘145 patent does not explicitly recite “opacifying.” However, the pigments of the original disclosure inherently opacify. Column 2, lines 24-27 and lines 30-33 disclose the exemplary pigment composition is a “pigment”-containing constituent that contains titanium dioxide. A “pigment” is a substance, such as titanium dioxide, that will block light when added to a paint. It inherently follows that the added substance, titanium dioxide, blocks light and thus provides the property to opacify. Column 1, lines 27-28 states that “The pigment composition is a composition with a high percentage of solids suspended in water.” Column 2, lines 46-47 disclose that the titanium dioxide “pigment” is maintained in a uniform dispersion. Solids in a dispersion or a suspension inherently opacify. Therefore, the disclosed pigments of ‘145 are opacifying pigments.</p>
		<p>Column 2, lines 41-56 discloses a dispersant in the fluid prepaint pigment composition.</p> <p>Column 2, lines 41-47 and 57-60 discloses a thickener in the fluid prepaint pigment composition.</p> <p>Column 2, lines 31-33 discloses water in the fluid prepaint pigment composition.</p> <p>wherein the dispersant(s) and the thickener(s) are stable when combined with the pigment(s) and with the other paint ingredients.</p> <p>The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-51, as well as other description in column 1, lines 64-67. The term “stable”, corresponds to “mutually compatible” recited in corresponding claim 19 of the Friel Patent. (See claims 1 and 89 for an explanation of how “stable” corresponds to “mutually compatible.”)</p>

<p>Claims 20 and A23. The prepaint of claim 19, wherein the volume solids content is about 35% to about 50% and the Stormer viscosity is about 60 to about 150 KU.</p>	<p>Claim 210. (currently amended) The pigment prepaint composition of claim 208, wherein the volume solids content is about 35% to about 50% and the Stormer viscosity is about 60 to about 150 KU.</p> <p>The broad range from about 35% to about 50% of volume solids claimed is inherent in the original disclosure of the ‘145 patent. The volume solids content of the paint has been calculated from the percentages and materials disclosed in the ‘145 patent to be in the range from about 35% to about 50%. The Stormer viscosity of about 60 to about 150 KU is also inherent since the typical viscosity for the paint of the present invention is around 90 to 100 KU, but may vary depending upon the mixture.</p>
<p>Claims 24 and A27. The prepaint of claim 19 or 21, wherein the opacifying pigment is a material selected from the group consisting of titanium dioxide, zinc oxide, lead oxide, a synthetic polymer pigment, and mixtures thereof.</p>	<p>Claim 212. (currently amended) The pigment prepaint composition of claim 208, wherein the pigment comprises titanium dioxide.</p> <p>The original disclosure explicitly supports the pigment comprising “titanium dioxide” at Column 2, lines 24-27 and lines 30-33, which discloses the exemplary pigment composition as a “pigment” - containing constituent that contains “titanium dioxide”. (See claims 19 and 208 for further explanations of how the original disclosure supports “titanium dioxide”.) Claim 238 includes only a partial list of the pigments of Friel claim 24. This is because claim 24 of Friel recites a laundry list including some specific pigments that are not expressly disclosed in the original disclosure of the ‘145 patent. The remaining specific pigments recited in claim 24 of the Friel patent are well known equivalents or substitutes for the “titanium dioxide” disclosed in the ‘145 patent.</p>

Claims 27 and A30. The prepaint of claim 19 or 21, wherein the dispersant is a selected from the group consisting of 2-amino-2-methyl-1-propanol; dimethylaminoethanol; potassium tripolyphosphate; trisodium polyphosphate; citric acid; polyacrylic acid; diolefin/maleic anhydride adducts; hydrophobically-modified polyacrylic acid, hydrophilically-modified polyacrylic acid, and salts thereof; and mixtures thereof.	Claim 214. (currently amended) The pigment prepaint composition of claim 208, wherein the dispersant comprises potassium tripolyphosphate.	The original disclosure explicitly supports the dispersant comprising potassium tripolyphosphate (KTTP) at Column 2, lines 39-53, which discloses the exemplary pigment composition as including potassium tripolyphosphate (KTTP). Claim 214 includes only a partial list of the dispersants of Friel claim 27. This is because claim 27 of Friel recites a laundry list including several specific dispersants that are not expressly disclosed in the original disclosure of the ‘145 patent. The remaining specific dispersants recited in claim 27 of the Friel patent are well known substitutes for the “potassium tripolyphosphate” disclosed in the ‘145 patent.
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	<p>Claims 28 and A31. The prepaint of claim 19 or 21, wherein the thickener is a selected from the group consisting of an alkali-soluble or alkali-swelling emulsion (ASE), a hydrophobically-modified, alkali-soluble emulsion (HASE), a hydrophobically-modified ethylene oxide-urethane polymer (HEUR), a cellulosic, a hydrophobically-modified cellulosic, a hydrophobically-modified polyacrylamide, a polyvinyl alcohol, a fumed silica, an attapulgite clay, a titanate chelating agent, and mixtures thereof.</p>	<p>Claim 216. (currently amended) The pigment prepaint composition of claim 208, wherein the thickener comprises a cellulosic.</p> <p>The original disclosure explicitly supports the thickener comprising a “cellulosic” at Column 2, line 57-60, which discloses the exemplary pigment composition as including a “cellulosic” for its thickener. Claim 216 includes only a partial list of the thickeners of Friel claim 28. This is because claim 28 of Friel recites a laundry list including several specific thickeners that are not expressly disclosed in the original disclosure of the ‘145 patent. The remaining specific thickeners recited in claim 28 of the Friel patent are well known substitutes for the “cellulosic” disclosed in the ‘145 patent.</p>
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Claims 30 and A34.	<p>Claim 218. (currently amended) The pigment prepaint composition of claim 19 or 21, further consisting essentially of at least one additive selected from the group consisting of an acid, a base, a defoamer, a coalescent, a cosolvent, a mildewcide, a biocide, and an antifreeze agent, with the additive being present in an amount of less than about 10% by weight, based on the total weight of the prepaint.</p>	<p>The original disclosure supports the pigment prepaint composition further consisting essentially of at least one additive comprising a “viscosity controlling agent” in an amount of 10% at Column 1, lines 57 and 63-64; column 2, lines 36-38. The term “additive” finds explicit antecedent basis in column 2, lines 61-64. The percentage of 10% is based on the weight of the pigment prepaint composition as set forth in column 4, lines 58-60. While the original disclosure does not explicitly provide for the “viscosity controlling agent” to be less than 10% for the pigment composition, one species of viscosity controlling agent, “a coalescent”, is disclosed in a percentage less than 10% for the dispersant-thickener prepaint composition at column 3, lines 21-22, which discloses that an “additional additive is a coalescent in an amount of 4 to 5 weight percent.” Thus, Claim 218 recitation of “10% or less” is supported. Furthermore, Friel’s recitation of “less than about 10%” is considered to be an obvious variation. The term “viscosity controlling agent” is considered to encompass at least several of the terms listed in corresponding Friel claim 28 because several of the Friel claim 28 terms are well known additives that are specifically for controlling viscosity. Thus, even though claim 218 explicitly lists only one broad term, “viscosity controlling agent” for the additive, the several specific additives of the Friel claim 28 that are not expressly disclosed in the original disclosure of the ‘145 patent are nevertheless well known specific examples of and/or compliments to the “viscosity controlling agent” disclosed in the ‘145 patent. Therefore, the additives not listed in the original ‘145 are considered to be obvious.</p>
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<p>Claims 32 and A37. A set of two different, but mutually compatible binder prepaints useful for formulating a latex paint, which set comprises:</p> <p>Claim 220. (currently amended) A plurality of prepaint compositions comprising two different, but stable fluid prepaint compositions useful for formulating a paint, which plurality comprises:</p>	<p>The term “plurality” is supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13. The term “prepaint” is supported by the context of the overall disclosure and in particular by “premixed compositions” as disclosed in the Abstract and in column 2, lines 14-15. (See claims 6/161 and 45/107 for a further explanation of how “prepaint” is supported.) The number of “two” prepaint compositions is supported by the original disclosure of the ‘145 patent in column 1, lines 49-54 and in the Abstract. The term “different” is provided by the original disclosure of the ‘145 patent at Column 3, lines 41-44 which indicates that each resin composition can be varied to achieve different finish characteristics; and Column 3, lines 65-67 which states that “[t]he actual balances between the components for the “different” finishes can be varied in accordance with the needs of the purchaser for a particular type of finish.” The terms “stable” and “fluid” are supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67 and column 2, lines 65-67.</p>
<p>(a) the opacifying prepaint of claim 19 or 21; and</p>	<p>(a) the pigment prepaint composition of claim 208; and</p> <p>See explanation regarding claims 19 and 208 above.</p>

	<p>(b) a latex polymeric binder prepaint having volume solids content of about 25% to about 70% or a Brookfield viscosity of less than about 100,000 centipoise at a shear rate of 1.25 reciprocal seconds,</p> <p>which prepaint consists essentially of a water-borne latex polymeric binder having a Tg of about -430.degree. C. to about 70.degree. C. and water;</p>	<p>(b) a resinous binder prepaint composition having volume solids content of about 25% to about 70% or a Brookfield viscosity of less than about 100,000 centipoise at a shear rate of 1.25 reciprocal seconds, which binder prepaint composition consists essentially of a water-borne resin containing binder having a Tg of about -430 degrees C. to about 70 degrees C. and water;</p>
		<p>Binder prepaint composition is supported by the original disclosure of the terms: "high resin content binder", "high resin component", and "high resin composition" used interchangeably in column 1, lines 50-51; column 2, lines 5-6; and column 3, lines 39-48. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resin containing or resinous binder. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.) The original disclosure of the '145 patent has relative volume solids content for the high resin composition in the range from about 25% to about 70% as has been calculated from the relative ingredient weight percentage contents of the original disclosure. Furthermore, the amounts of water and resin in the high and low resin compositions can be varied as set forth in column 3, lines 41-43, thus providing further variation of the volume solids content. Like the broad range of solids content percentages, the Brookfield viscosity less than 100,000 centipoise at a shear rate of 1.25 reciprocal seconds encompasses the viscosities that could be achieved by the binder prepaint of the '145 original disclosure.</p> <p>Likewise, the resin containing binder of the original disclosure has a Tg that falls within the broad range of about -430 degrees C to about 70 degrees C. While not explicitly disclosed, the volume solids content, Brookfield viscosity, and Tg of the binder recited in claims 32 and 220 are inherent in the binder prepaint composition of the original disclosure of the '145 patent.</p>

<p>wherein the prepaint ingredients are mutually compatible with each other and with the ingredients of the other prepaint in the set.</p>	<p>Claim 222. (currently amended) The plurality of fluid prepaint compositions of claim 220, wherein the binder prepaint composition has a volume solids content of about 30 to about 65% and a Brookfield viscosity of about 100 to about 50,000 centipoise at a shear rate of 1.25 reciprocal seconds, and consists essentially of a water-borne polymeric binder having a Tg of about -10 to about 60 degree. C.</p>
<p>wherein the ingredients of the prepaint compositions are stable when combined with each other and with the ingredients of the other prepaint compositions in the plurality.</p>	<p>The original disclosure of the '145 patent has relative volume solids content for the high resin composition in the range from about 30% to about 65% as has been calculated from the relative ingredient weight percentage contents of the original disclosure. Furthermore, the amounts of water and resin in the high and low resin compositions can be varied as set forth in column 3, lines 41-43, thus providing further variation of the volume solids content. Like the broad range of solids content percentages, the Brookfield viscosity of about 100 to about 50,000 centipoise at a shear rate of 1.25 reciprocal seconds still encompasses the viscosities of the binder prepaint of the '145 original disclosure. Likewise, the resin containing binder of the original disclosure has a Tg that falls within the broad range of about -10 degrees C to about 60 degrees C. While not explicitly disclosed, the volume solids content, Brookfield viscosity, and Tg of the binder recited in claims 33 and 222 are inherent in the binder prepaint composition of the original disclosure of the '145 patent.</p>

	<p>Claims 34 and A39. The set of prepaints of claim 32, wherein the binder prepaint further consists essentially of at least one additive selected from the group consisting of an acid, a base, a defoamer, a coalescent, a cosolvent, a mildewcide, a biocide, and antifreeze agent, the additive being present in an amount of less than about 10% by weight, based on the total weight of the prepaint.</p> <p>Claim 224. (currently amended) The plurality of fluid prepaint compositions of claim 220, wherein the binder prepaint composition further consists essentially of at least one additive comprising a coalescent, the additive being present in an amount of less than about 10% by weight, based on the total weight of the binder prepaint composition.</p>	<p>A “coalescent” as an additive in an amount less than about 10% is an additive to the binder prepaint composition as set forth in column 3, lines 39-41. The terms “by weight” and “based on the total weight” with regard to the binder prepaint composition are supported by the consistency of use of weight percentages throughout the original disclosure of the ‘145 patent and by the disclosure in column 4, lines 1-12, which makes clear that the values for binder prepaint composition (High Resin in the table) are disclosed in “weight percentages”.</p>
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Claims 35 and A40/A41.	<p>Claim 226. (currently amended) A plurality of prepaint compositions comprising three different, but stable, fluid prepaint compositions, useful for formulating a paint product, which plurality comprises:</p> <p>The term “plurality” is supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13. The term “prepaint” is supported by the context of the overall disclosure and in particular by “premixed compositions” as disclosed in the Abstract and in column 2, lines 14-15. (See claims 6/161 and 45/107 for a further explanation of how “prepaint” is supported.) The number of “three” prepaint compositions is supported by the original disclosure of the ‘145 patent in column 1, lines 49-54; the Abstract; column 3, lines 56-58 and 61-63; and column 4, lines 9 and 11. The term “different” is provided by the original disclosure of the ‘145 patent at column 3, lines 41-44 which indicates that each resin composition can be varied to achieve different finish characteristics; and Column 3, lines 65-67 which states that “[t]he actual balances between the components for the “different” finishes can be varied in accordance with the needs of the purchaser for a particular type of finish.” The terms “stable” and “fluid” are supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67 and column 2, lines 65-67.</p>
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<p>(a) the set of prepaints of claim 32 wherein the extender prepaint has a volume solids content of about 30% to about 70%, a PVC of about 35% to about 100%, and a Stormer viscosity of about 50 to about 250 KU; and</p>	<p>(a) the plurality of prepaint compositions of claim 220; and</p> <p>See the explanation regarding claims 32 and 220 above for the prepaints recited therein. With regard to the specific ranges of volume solids content and pigment volume concentration (PVC) of the extender prepaint in claim 35 of the Friel patent, the original disclosure of the '145 does not explicitly or inherently provide these ranges. However, depending on how much variation there is due to the term "about", the original disclosure may be considered to have or at least teach a volume solids content and a PVC within the recited ranges. However to avoid a rejection based on lack of explicit antecedent basis these ranges have been omitted from claim 226. As explained above, a Stormer viscosity of about 50 to about 250 KU is inherently met by the original disclosure of the '145 patent. This element of claim 226 has been relocated relative to its position in the Friel claim 35 to provide correct antecedent basis in claim 226.</p>
<p>(b) a fluid pigment extender prepaint which consists essentially of:</p>	<p>(b) a low resin prepaint composition which consists essentially of:</p> <p>The low resin prepaint composition is supported by the original disclosure of column 3, lines 29-31.</p>

	(i) at least one mineral extender,	Column 3, lines 30-32 disclose diatomaceous earth. Column 3, lines 33-35 discloses ground limestone and calcined clay. Friel discloses that the extender pigments include calcium carbonate (limestone), silica and others similar to the original disclosure of the '145 patent by the Applicant. While the term "silica", disclosed as an extender in the Friel '537 patent, is not explicitly disclosed as a constituent of the low resin prepaint composition of the '145 patent, column 3, lines 29-38 may be considered to support clay, ground limestone, and "silica" because "silica" is a primary constituent of diatomaceous earth. The term "silica" is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of "extender pigment")
	(ii) at least one thickener,	A "thickener" in the low resin prepaint composition is supported by the disclosure of column 3, lines 34-38.
	(iii) water, and	Column 2, lines 6-8 and column 3, line 29 and 30 make clear that the low resin composition includes water.
	(iv) optionally a polymeric binder.	Column 2, lines 6-8 and column 3, lines 29-30 of the '145 patent disclose resin in the low resin prepaint composition or a low resin content "binder" as disclosed in the Abstract.

	<p>wherein the low resin prepaint composition has a Stormer viscosity of about 50 to about 250 KU.</p>	<p>As explained above, a Stormer viscosity of about 50 to about 250 KU is inherently met by the original disclosure of the '145 patent since it defines viscosities in a range from that of water and hardened concrete. This element of claim 226 has been relocated to provide correct antecedent basis in the claim. (This feature was located in another part of claim 35 of the Friel patent.)</p>
Claims 36 and A42.	<p>Claim 228. (currently amended) The plurality fluid prepaint compositions of claim 226, wherein the low resin prepaint composition has a Stormer viscosity of about 60 to about 150 KU.</p>	<p>With regard to the specific ranges of volume solids content and pigment volume concentration (PVC) of the extender prepaint in claim 36 of the Friel patent, the original disclosure of the '145 does not explicitly or inherently provide these ranges. However, depending on how much variation there is due to the term "about", the original disclosure may be considered to have or at least teach a volume solids content and a PVC within the recited ranges. However, to avoid a rejection based on lack of explicit antecedent basis these ranges have been omitted from claim 228. As explained above, a Stormer viscosity of about 60 to about 150 KU is inherently met by the original disclosure of the '145 patent.</p>

Claims 37 and A43. The set of prepaints of claim 32, wherein the extender prepaint further consists essentially of at least one additive selected from the group consisting of an acid, a base, a defoamer, a coalescent, a cosolvent, a mildewcide, a biocide and an antifreeze agent with the additive being present in an amount of less than about 20% by weight, based on the total weight of prepaint.	Claim 230. (currently amended) The plurality of fluid prepaint compositions of claim 220, wherein the binder prepaint composition further consists essentially of at least one additive comprising a coalescent, with the additive being present in an amount of less than about 20% by weight, based on the total weight of the binder prepaint composition.
	A “coalescent” as an additive in an amount less than about 20% is an additive to the binder prepaint composition as set forth in column 3, lines 39-41. The terms “by weight” and “based on the total weight” with regard to the binder prepaint composition are supported by the consistency of use of weight percentages throughout the original disclosure of the ‘145 patent and by the disclosure in column 4, lines 1-12, which makes clear that the values for binder prepaint composition (High Resin in the table) are disclosed in “weight percentages”.

Claims 21 and A24. A fluid white opacifying prepaint having a volume solids content of about 30% to about 70%, a PVC of about 35% to about 100%, and a Stormer viscosity of about 50 to about 250 KU, useful for formulating a pigmented paint product containing other paint ingredients, which fluid prepaint composition consists essentially of:	<p>Claim 232. (currently amended) A fluid pigment prepaint composition having a volume solids content of about 30% to about 70%, a PVC of about 35% to about 100%, and a Stormer viscosity of about 50 to about 250 KU, useful for formulating a pigmented paint product containing other paint ingredients, which fluid prepaint composition consists essentially of:</p>	
	<p>The term "fluid" is supported by the original disclosure of the '145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67 and column 2, lines 65-67. (See Claims 1 and 89 for an explanation of how "prepaint" is supported in the original disclosure of the '145 patent.) With regard to the Friel claim 21 term "one pack", Friel's disclosure fails to define this term. As such, it appears to have little or no meaning in the claims and has been omitted in corresponding claim 232 of the present application. The term "latex" is not explicitly recited in the original disclosure of the '145 patent, and has been omitted from claim 232. However, the paint described in the '145 patent is inherently a "latex" paint. This is so because the prepaint compositions are "fluid" based on the water component in each. (See column 2, lines 30-32; column 3, lines 10-12; column 3, lines 29-30; and column 3, lined 39-41.) Column 3, lines 39-48 also makes clear that the high resin component or binder prepaint is an aqueous composition. As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex paint. The volume solids content (VS) and pigment volume concentration (PVC) of particular ranges is not explicitly described. However, the VS and the PVC of the pigment prepaint composition have been calculated to be within the range from about 30% to about 70% and about 35% and about 100%, respectively. It should be noted that these ranges are very broad so as hardly to be limitations. Although the relative quantities of the various ingredients are set forth in weight percentages in the '145 original disclosure, these values can be converted to VS and PVC, and shown to reside in the claimed ranges based on known densities and percentages of the materials in</p>	

		the pigment composition disclosed in column 2, lines 24-38. The recited range of Stormer viscosity recited range of Stormer viscosity recited to be from 50 KU to 250KU is a broad range comparable to a range from the viscosity of water to that of hardened concrete. This range is considered to be met inherently by the original disclosure of the '145 patent since the materials in the pigment composition present in their suggested percentages will fall within this range of viscosity.
(i) at least one opacifying pigment,	(i) at least one pigment,	The original disclosure of the '145 patent does not explicitly recite “opacifying.” However, the pigments of the original disclosure inherently opacify. Column 2, lines 24-27 and lines 30-33 disclose the exemplary pigment composition is a “pigment”-containing constituent that contains titanium dioxide. A “pigment” is a substance, such as titanium dioxide, that will block light when added to a paint. It inherently follows that the added substance, titanium dioxide, blocks light and thus provides the property to opacify. Column 1, lines 27-28 states that “The pigment composition is a composition with a high percentage of solids suspended in water.” Column 2, lines 46-47 disclose that the titanium dioxide “pigment” is maintained in a uniform dispersion. Solids in a dispersion or a suspension inherently opacify. Therefore, the disclosed pigments of ‘145 are opacifying pigments.
(ii) at least one dispersant,	(ii) at least one dispersant,	Column 2, lines 41-56 discloses a dispersant in the fluid prepaint pigment composition.
(iii) at least one thickener,	(iii) at least one thickener,	Column 2, lines 41-47 and 57-60 discloses a thickener in the fluid prepaint pigment composition.

(iv) at least one film-forming or non-film-forming polymer, and	(iv) at least one film-forming or non-film-forming resin, and	A resin added to the fluid prepaint pigment composition as set forth in column 2, line 67 to column 3, line 3.
(v) water; wherein the dispersant(s), the thickener(s), and the polymer(s) are compatible with the pigment(s) and with the other paint ingredients and wherein the premixed composition is stable to sedimentation.	(v) water; wherein the dispersant, the thickener, and the resin are stable when combined with the pigment and with the other premixed composition ingredients and wherein the premixed composition is stable and free from settling.	Column 2, lines 31-33 discloses water in the premixed pigment composition. The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-51, as well as other description in column 1, lines 64-67. The disclosure of the ‘145 patent makes clear that each of the “dispersant, thickener, resin, pigment and other composition contents are stable when combined. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 21 of the Friel Patent. (See claims 1 and 89 for an explanation of how “stable” corresponds to “mutually compatible.”) The term “sedimentation” is not explicitly recited in the ‘145 patent. However, a term “free from settling” that has the same meaning as “stable to sedimentation” is disclosed in column 3, line 50.
Claims 22 and A25. The prepaint of claim 21, wherein the volume solids content is about 35% to about 50%, the PVC is about 50 to about 100%, and the Stormer viscosity is about 60 to about 150 KU.	Claim 234. (currently amended) The prepaint composition of claim 232, wherein the volume solids content is about 35% to about 50%, the PVC is about 50 to about 100%, and the Stormer viscosity is about 60 to about 150 KU.	The broad range from about 35% to about 50% of volume solids claimed is inherent in the original disclosure of the ‘145 patent. The volume solids content of the fluid prepaint pigment composition has been calculated from the percentages and materials disclosed in the ‘145 patent to be in the range from about 35% to about 50%. Likewise, the PVC is, when calculated, is in the range of about 50 to about 100%. The Stormer viscosity of the fluid prepaint pigment composition also falls in the range from about 60 to about 150 KU and this limitation is also therefore inherently met.

<p>claims 23 and A26. The prepaint of claim 21, wherein the polymer is adsorbed onto the opacifying pigment.</p>	<p>Claim 236. (currently amended) The prepaint composition of claim 232, wherein the resin is adsorbed onto the pigment.</p> <p>Column 2, line 67 to column 3, line 3 discloses the resinous binder. The resinous binder inherently adsorbs onto the pigment when the resinous binder comes into contact with the pigment in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having “no discernable settling” in column 2, line 67.</p>
<p>Claims 24 and A27. The prepaint of claim 19 or 21, wherein the opacifying pigment is a material selected from the group consisting of titanium dioxide, zinc oxide, lead oxide, a synthetic polymer pigment, and mixtures thereof.</p>	<p>Claim 238. (currently amended) The prepaint composition of claim 232, wherein the pigment comprises titanium dioxide.</p> <p>The original disclosure explicitly supports the pigment comprising “titanium dioxide” at Column 2, lines 24-27 and lines 30-33, which discloses the exemplary pigment composition as a “pigment” - containing constituent that contains “titanium dioxide”. (See claims 19 and 208 for further explanations of how the original disclosure supports “titanium dioxide”.) Claim 238 includes only a partial list of the pigments of Friel claim 24. This is because claim 24 of Friel recites a laundry list including some specific pigments that are not expressly disclosed in the original disclosure of the ‘145 patent. The remaining specific pigments recited in claim 24 of the Friel patent are well known equivalents or substitutes for the “titanium dioxide” disclosed in the ‘145 patent.</p>

<p>Claims 27 and A30. The prepaint of claim 19 or 21, wherein the dispersant is a selected from the group consisting of 2-amino-2-methyl-1-propanol; dimethylaminoethanol; potassium tripolyphosphate;</p>	<p>Claim 240. (currently amended) The prepaint composition of claim 232, wherein the dispersant comprises potassium tripolyphosphate.</p> <p>The original disclosure explicitly supports the dispersant comprising potassium tripolyphosphate (KTTP) at Column 2, lines 39-53, which discloses the exemplary pigment composition as including potassium tripolyphosphate (KTTP). Claim 240 includes only a partial list of the dispersants of Friel claim 27. This is because claim 27 of Friel recites a laundry list including several specific dispersants that are not expressly disclosed in the original disclosure of the '145 patent. The remaining specific dispersants recited in claim 27 of the Friel patent are well known substitutes for the "potassium tripolyphosphate" disclosed in the '145 patent.</p>
	<p>trisodium polyphosphate; citric acid; polyacrylic acid; diolefin/maleic anhydride adducts; hydrophobically-modified polyacrylic acid, hydrophilically-modified polyacrylic acid, and salts thereof; and mixtures thereof.</p>

Claims 28 and A31. The prepaint of claim 19 or 21, wherein the thickener is a selected from the group consisting of an alkali-soluble or alkali-swelling emulsion (ASE), a hydrophobically-modified, alkali-soluble emulsion (HASE), a hydrophobically-modified ethylene oxide-urethane polymer (HEUR), a cellulosic, a hydrophobically-modified cellulosic, a hydrophobically-modified polyacrylamide, a polyvinyl alcohol, a fumed silica, an attapulgite clay, a titanate chelating agent, and mixtures thereof.	<p>Claim 242. (currently amended) The prepaint composition of claim 232, wherein the thickener comprises a cellulosic.</p>	<p>The original disclosure explicitly supports the thickener comprising a “cellulosic” at Column 2, line 57-60, which discloses the exemplary pigment composition as including a “cellulosic” for its thickener. Claim 242 includes only a partial list of the thickeners of Friel claim 28. This is because claim 28 of Friel recites a laundry list including several specific thickeners that are not expressly disclosed in the original disclosure of the ‘145 patent. The remaining specific thickeners recited in claim 28 of the Friel patent are well known substitutes for the “cellulosic” disclosed in the ‘145 patent.</p>
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Claims 29 and A32/A33.	<p>Claim 244. (currently amended) The prepaint composition of claim 232, wherein the resin comprises an acrylic resin.</p>	<p>The original disclosure explicitly supports the acrylic resin by the disclosure of a specific resin known as “6183 made by BASF”, which is an acrylic resin. Claim 244 includes only a partial list of the resins of Friel claim 29. This is because claim 29 of Friel recites a laundry list including several specific resins that are not expressly disclosed in the original disclosure of the ‘145 patent. The remaining specific resins recited in claim 29 of the Friel patent are well known equivalents or substitutes for the “acrylic resin” disclosed by “6183 made by BASF” in the ‘145 patent. As may be appreciated, resins used in aqueous paint compositions in general, and the specific acrylic resin disclosed in column 3, lines 45-46, will be polymers and will inherently form a latex polymeric paint. The specific range of weight percent and details directed to the polymer being of a monomer or co-monomer is not explicitly recited, but is considered to recite alternatives that are within the ordinary skill in the art. However, these details have been omitted from claim 244 to avoid a rejection based on lack of antecedent basis.</p>
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Claims 30 and A34.	<p>Claim 246. (currently amended) The prepaint comprising of claim 19 or 21, further consisting essentially of at least one additive selected from the group consisting of an acid, a base, a defoamer, a coalescent, a cosolvent, a mildewcide, a biocide, and an antifreeze agent, with the additive being present in an amount of less than about 10% by weight, based on the total weight of the prepaint.</p>	<p>The original disclosure supports the pigment prepaint composition further consisting essentially of at least one additive comprising a “viscosity controlling agent” in an amount of 10% at Column 1, lines 57 and 63-64; column 2, lines 36-38. The term “additive” finds explicit antecedent basis in column 2, lines 61-64. The percentage of 10% is based on the weight of the pigment prepaint composition as set forth in column 4, lines 58-60. While the original disclosure does not explicitly provide for the “viscosity controlling agent” to be less than 10% for the pigment composition, one species of viscosity controlling agent, “a coalescent”, is disclosed in a percentage less than 10% for the dispersant-thickener prepaint composition at column 3, lines 21-22, which discloses that an “additional additive is a coalescent in an amount of 4 to 5 weight percent.” Thus, the recitation of “10% or less” is supported. Furthermore, Friel’s recitation of “less than about 10%” is considered to be an obvious variation. The term “viscosity controlling agent” is considered to encompass at least several of the terms listed in corresponding Friel claim 30 because several of the Friel claim 30 terms are well known additives that are specifically for controlling viscosity. Thus, even though claim 246 explicitly lists only one broad term, “viscosity controlling agent” for the additive, the several specific additives of the Friel claim 30 that are not expressly disclosed in the original disclosure of the ‘145 patent are nevertheless well known specific examples of and/or compliments to the “viscosity controlling agent” disclosed in the ‘145 patent. Therefore, the additives not listed in the original ‘145 are considered to be obvious.</p>
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Claims 32 and A37. A set of two different, but mutually compatible binder prepaints useful for formulating a latex paint, which set comprises:	<p>Claim 248. (currently amended) A plurality of prepaint compositions comprising two different, but stable fluid prepaint compositions useful for formulating a paint product, which plurality comprises:</p>	<p>The term “plurality” is supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13. The term “prepaint” is supported by the context of the overall disclosure and in particular by “premixed compositions” as disclosed in the Abstract and in column 2, lines 14-15. (See claims 6/161 and 45/107 for a further explanation of how “prepaint” is supported.) The number of “two” prepaint compositions is supported by the original disclosure of the ‘145 patent in column 1, lines 49-54 and in the Abstract. The term “different” is provided by the original disclosure of the ‘145 patent at Column 3, lines 41-44 which indicates that each resin composition can be varied to achieve different finish characteristics; and Column 3, lines 65-67 which states that “[t]he actual balances between the components for the “different” finishes can be varied in accordance with the needs of the purchaser for a particular type of finish.” The terms “stable” and “fluid” are supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67 and column 2, lines 65-67.</p>
	<p>(a) the opacifying prepaint of claim 19 or 21; and</p>	<p>(a) the pigment prepaint composition of claim 232; and</p>

	<p>(b) a latex polymeric binder prepaint having volume solids content of about 25% to about 70% or a Brookfield viscosity of less than about 100,000 centipoise at a shear rate of 1.25 reciprocal seconds, which binder prepaint composition consists essentially of a water-borne resin containing binder having a Tg of about -430 degrees C. to about -430.degree. C. to about 70.degree. C. and water;</p>	<p>Binder prepaint composition is supported by the original disclosure of the terms: "high resin content binder", "high resin component", and "high resin composition" used interchangeably in column 1, lines 50-51; column 2, lines 5-6; and column 3, lines 39-48. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resin containing or resinous binder. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.) The original disclosure of the '145 patent has relative volume solids content for the high resin composition in the range from about 25% to about 70% as has been calculated from the relative ingredient weight percentage contents of the original disclosure. Furthermore, the amounts of water and resin in the high and low resin compositions can be varied as set forth in column 3, lines 41-43, thus providing further variation of the volume solids content. Like the broad range of solids content percentages, the Brookfield viscosity less than 100,000 centipoise at a shear rate of 1.25 reciprocal seconds encompasses the viscosities that could be achieved by the binder prepaint of the '145 original disclosure. Likewise, the resin containing binder of the original disclosure has a Tg that falls within the broad range of about -430 degrees C to about 70 degrees C. While not explicitly disclosed, the volume solids content, Brookfield viscosity, and Tg of the binder recited in claims 32 and 220 are inherent in the binder prepaint composition of the original disclosure of the '145 patent.</p>
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<p>wherein the prepaint ingredients are mutually compatible with each other and with the ingredients of the other prepaint in the set.</p>	<p>wherein the ingredients of the prepaint compositions are stable when combined with each other and with the ingredients of the other prepaint compositions in the plurality.</p>	<p>The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-18 and column 3, lines 49-51, as well as other description in column 1, lines 64-67. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 21 of the Friel Patent. (See claims 1 and 89 for an explanation of how “stable” corresponds to “mutually compatible.”)</p>
<p>Claims 33 and A38. The set of prepaints of claim 32, wherein the binder prepaint has a volume solids content of about 30 to about 65% and a Brookfield viscosity of about 100 to about 50,000 centipoise at a shear rate of 1.25 reciprocal seconds, and consists essentially of a water-borne polymeric binder having a Tg of about -10 to about 60.degree. C.</p>	<p>Claim 250. (currently amended) The plurality of prepaint compositions of claim 248, wherein the binder prepaint composition has a volume solids content of about 30 to about 65% and a Brookfield viscosity of about 100 to about 50,000 centipoise at a shear rate of 1.25 reciprocal seconds still encompasses the viscosities of the binder prepaint of the ‘145 original disclosure. Likewise, the resin containing binder of the original disclosure has a Tg that falls within the broad range of about -10 degrees C to about 60 degrees C. While not explicitly disclosed, the volume solids content, Brookfield viscosity, and Tg of the binder recited in claims 33 and 250 are inherent in the binder prepaint composition of the original disclosure of the ‘145 patent.</p>	

Claims 34 and A39. The set of prepaints of claim 32, wherein the binder prepaint further consists essentially of at least one additive selected from the group consisting of an acid, a base, a defoamer, a coalescent, a cosolvent, a mildewcide, a biocide, and antifreeze agent, the additive being present in an amount of less than about 10% by weight, based on the total weight of the binder prepaint composition.	<p>Claim 252. (currently amended) The plurality of prepaint compositions of claim 248, wherein the binder prepaint composition further consists essentially of at least one additive comprising a viscosity controlling agent, the additive being present in an amount of 10% or less by weight, based on the total weight of the binder prepaint composition.</p> <p>The original disclosure supports the pigment prepaint composition further consisting essentially of at least one additive comprising a “viscosity controlling agent” in an amount of 10% at Column 1, lines 57 and 63-64; column 2, lines 36-38. The term “additive” finds explicit antecedent basis in column 2, lines 61-64. The percentage of 10% is based on the weight of the pigment prepaint composition as set forth in column 4, lines 58-60. While the original disclosure does not explicitly provide for the “viscosity controlling agent” to be less than 10% for the pigment composition, one species of viscosity controlling agent, “a coalescent”, is disclosed in a percentage less than 10% for the dispersant-thickener prepaint composition at column 3, lines 21-22, which discloses that an “additional additive is a coalescent in an amount of 4 to 5 weight percent.” Hence, Friel’s recitation of “less than about 10%” is considered to be an obvious variation. The term “viscosity controlling agent” is considered to encompass at least several of the terms listed in corresponding Friel claim 30 because several of the Friel claim 30 terms are well known additives that are specifically for controlling viscosity. Thus, even though claim 246 explicitly lists only one broad term, “viscosity controlling agent” for the additive, the several specific additives of the Friel claim 30 that are not expressly disclosed in the original disclosure of the ‘145 patent are nevertheless well known specific examples of and/or compliments to the “viscosity controlling agent” disclosed in the ‘145 patent. Therefore, the additives not listed in the original ‘145 are considered to be obvious.</p>
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Claims 35 and A49/A41. A set of three different, but mutually compatible, fluid prepaints, useful for formulating a latex paint, which set comprises:	<p>Claim 254. (currently amended) A plurality of prepaint compositions comprising three different, but stable, fluid prepaint compositions, useful for formulating a paint product, which plurality comprises:</p> <p>The term “plurality” is supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13. The term “prepaint” is supported by the context of the overall disclosure and in particular by “premixed compositions” as disclosed in the Abstract and in column 2, lines 14-15. (See claims 6/161 and 45/107 for a further explanation of how “prepaint” is supported.) The number of “three” prepaint compositions is supported by the original disclosure of the ‘145 patent in column 1, lines 49-54; the Abstract; column 3, lines 56-58 and 61-63; and column 4, lines 9 and 11. The term “different” is provided by the original disclosure of the ‘145 patent at column 3, lines 41-44 which indicates that each resin composition can be varied to achieve different finish characteristics; and Column 3, lines 65-67 which states that “[t]he actual balances between the components for the “different” finishes can be varied in accordance with the needs of the purchaser for a particular type of finish.” The terms “stable” and “fluid” are supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-52, as well as other description in column 1, lines 64-67 and column 2, lines 65-67.</p>
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<p>(a) the set of prepaints of claim 32 wherein the extender prepaint has a volume solids content of about 30% to about 70%, a PVC of about 35% to about 100%, and a Stormer viscosity of about 50 to about 250 KU; and</p>	<p>(a) the plurality of prepaint compositions of claim 248; and</p> <p>See the explanation regarding claims 32 and 248 above for the prepaints recited therein. With regard to the specific ranges of volume solids content and pigment volume concentration (PVC) of the extender prepaint in claim 35 of the Friel patent, the original disclosure of the '145 does not explicitly or inherently provide these ranges. However, depending on how much variation there is due to the term "about", the original disclosure may be considered to have or at least teach a volume solids content and a PVC within the recited ranges. However, to avoid a rejection based on lack of explicit antecedent basis these ranges have been omitted from claim 254. As explained above, a Stormer viscosity of about 50 to about 250 KU is inherently met by the original disclosure of the '145 patent. This element of claim 254 has been relocated relative to its position in the Friel claim 35 to provide correct antecedent basis in claim 226.</p>
<p>(b) a fluid pigment extender prepaint which consists essentially of:</p>	<p>(b) a fluid low resin prepaint composition which consists essentially of:</p> <p>The low resin prepaint composition is supported by the original disclosure of column 3, lines 29-31.</p>

<p>(i) at least one mineral extender,</p> <p>(i) at least one of calcined clay, ground limestone, diatomaceous earth, and mixtures thereof,</p>	<p>Column 3, lines 30-32 disclose diatomaceous earth. Column 3, lines 33-35 discloses ground limestone and calcined clay. Friel discloses that the extender pigments include calcium carbonate (limestone), silica and others similar to the original disclosure of the '145 patent by the Applicant. While the term "silica", disclosed as an extender in the Friel '537 patent, is not explicitly disclosed as a constituent of the low resin prepaint composition of the '145 patent, column 3, lines 29-38 may be considered to support clay, ground limestone, and "silica" because "silica" is a primary constituent of diatomaceous earth. The term "silica" is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of "extender pigment".)</p>
<p>(ii) at least one thickener, thickener,</p>	<p>A "thickener" in the low resin prepaint composition is supported by the disclosure of column 3, lines 34-38.</p>
<p>(iii) water, and</p>	<p>Column 2, lines 6-8 and column 3, line 29 and 30 make clear that the low resin composition includes water.</p>
<p>(iv) optionally a polymeric binder.</p>	<p>Column 2, lines 6-8 and column 3, lines 29-30 of the '145 patent disclose resin in the low resin prepaint composition or a low resin content "binder" as disclosed in the Abstract.</p>

	<p>wherein the binder prepaint composition has a Stormer viscosity of about 50 to about 250 KU.</p>	<p>As explained above, a Stormer viscosity of about 50 to about 250 KU is inherently met by the original disclosure of the '145 patent since it defines viscosities in a range from that of water and hardened concrete. This element of claim 226 has been relocated relative to its position in Friel claim 35 to provide correct antecedent basis in the claim.</p>
Claims 36 and A42.	<p>Claim 256. (currently amended) The plurality of fluid prepaint compositions of claim 254, wherein the low resin prepaint composition has a Stormer viscosity of about 60 to about 150 KU.</p>	<p>With regard to the specific ranges of volume solids content and pigment volume concentration (PVC) of the extender prepaint in claim 36 of the Friel patent, the original disclosure of the '145 does not explicitly or inherently provide these ranges. However, depending on how much variation there is due to the term "about", the original disclosure may be considered to have or at least teach a volume solids content and a PVC within the recited ranges. However, to avoid a rejection based on lack of explicit antecedent basis these ranges have been omitted from claim 228. As explained above, a Stormer viscosity of about 60 to about 150 KU is inherently met by the original disclosure of the '145 patent.</p>

Claims 37 and A43. The set of prepaints of claim 32, wherein the extender prepaint further consists essentially of at least one additive selected from the group consisting of an acid, a base, a defoamer, a coalescent, a cosolvent, a mildewcide, a biocide and an antifreeze agent with the additive being present in an amount of less than about 20% by weight, based on the total weight of prepaint.

Claim 258. (currently amended) The plurality of fluid prepaint compositions of claim 248, wherein the binder prepaint composition further consists essentially of at least one additive comprising a coalescent, with the additive being present in an amount of less than about 20% by weight, based on the total weight of the binder prepaint composition.

A “coalescent” as an additive in an amount less than about 20% is an additive to the binder prepaint composition as set forth in column 3, lines 39-41. The terms “by weight” and “based on the total weight” with regard to the binder prepaint composition are supported by the consistency of use of weight percentages throughout the original disclosure of the ‘145 patent and by the disclosure in column 4, lines 1-12, which makes clear that the values for binder prepaint composition (High Resin in the table) are disclosed in “weight percentages”.

Friel '537 PATENT CLAIMS and Friel '405 APPLICATION CLAIMS (application claims indicated by the letter "A" preceding the claim number.)	CORRESPONDING CLAIM/COUNT IN CURRENT APPLICATION (A Pigment Extender Composition)	BASIS FOR CONSTRUCTIVE REDUCTION TO PRACTICE AND WRITTEN DESCRIPTION IN APPLICANT'S ORIGINAL SPECIFICATION OF U.S. PATENT 6,221,145 (hereinafter '145 patent)
Claims 31 and A35/A36. A fluid pigment extender prepaint, useful for formulating a one pack, pigmented latex paint containing other paint ingredients, which prepaint consists essentially of:	Claim 260. (currently amended) A fluid low resin prepaint composition, useful for producing a pigmented paint product containing other paint contents, which low resin prepaint composition consists essentially of:	<p>The term "fluid" is supported by the original disclosure of the '145 patent in column 2, lines 14-17 and column 3, lines 49-52. Column 3, lines 51-52 recites the term "fluid". The term "low resin" is supported by column 3, line 29-30. The low resin prepaint composition of the '145 patent has similar contents to those of the extender prepaint of Friel claim 31. The term "prepaint" is supported by the context of the overall disclosure and in particular by "premixed compositions" as disclosed in the Abstract and in column 2, lines 14-15. (See claims 6/161 and 45/107 for a further explanation of how "prepaint" is supported.) The term "paint product" and that it is a "pigmented" paint product is supported by the disclosure that combining the prepaint compositions having their constituent ingredients in the correct proportions will "enable the aqueous pigment dispersion to be used ... to generate the wide scope of paint products", as set forth in the original disclosure of the '145 patent at column 2, lines 61-65. The term "ingredients" is not explicitly recited in the '145 patent. However, an analogous term "contents" has been substituted for the</p>

term ingredients in the otherwise analogous claim 260 of the present application. The term “content” is supported in the original ‘145 disclosure at column 1, lines 49-51 in which “content” refers to a constituent ingredient for two of the prepaint compositions. Thus, “contents” are disclosed. Several other constituent ingredients are also described as making up the prepaint compositions, and thus these ingredients are also “contents”.

	<p>(i) at least one mineral extender having a volume solids content of about 30% to about 70%, a PVC of about 35% to about 100%, and a Stormer viscosity of about 50 to about 250 KU;</p>	<p>Column 3, lines 30-32 disclose diatomaceous earth. Column 3, lines 33-35 discloses ground limestone and calcined clay. Friel discloses that the extender pigments include calcium carbonate (limestone), silicates (which are clays), silica and others similar to those of the '145 patent original disclosure. Column 3, lines 29-38 support clay, ground limestone, and silica. Silica is a primary constituent of diatomaceous earth, which term "silica" is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of "extender pigment".) With regard to the specific ranges of volume solids content and pigment volume concentration (PVC) of the extender prepaint in claim 31 of the Friel patent, the original disclosure of the '145 does not explicitly or inherently provide these ranges. However, depending on how much variation there is due to the term "about", the original disclosure may be considered to have, (or at least teach), a volume solids content and a PVC within the recited ranges. However, to avoid a rejection based on lack of explicit antecedent basis these ranges have been omitted from claim 260. As explained above, a Stormer viscosity of about 50 to about 250 KU is inherently met by the original disclosure of the '145 patent since it defines viscosities in a range from that of water and hardened concrete.</p>
	<p>(ii) at least one thickener,</p>	<p>A "thickener" in the low resin prepaint composition is supported by the disclosure of column 3, lines 34-38.</p>

(iii) water, and	(iii) water, and	Column 2, lines 6-8 and column 3, line 29 and 30 make clear that the low resin composition includes water.
(iv) an optional polymeric binder; wherein the prepaint ingredients are compatible with each other and with the ingredients of the paint.	(iv) an optional resin containing binder; wherein the low resin prepaint composition contents are stable when combined with each other and with the contents of the paint product.	Column 2, lines 6-8 and column 3, lines 29-30 of the '145 patent disclose resin in the "low resin" prepaint composition, or the low resin content "binder" as disclosed in the Abstract. The term "stable" is supported by the original disclosure of the '145 patent in column 2, lines 14-18 and column 3, lines 49-51. The term "stable" corresponds to "mutually compatible" recited in corresponding claim 31 of the Friel Patent. (See claims 1 and 89 for an explanation of how "stable" corresponds to "mutually compatible".)

Friel '537 PATENT CLAIMS and Friel '405 APPLICATION CLAIMS (application claims indicated by the letter "A" preceding the claim number.)	CORRESPONDING CLAIM/COUNT IN CURRENT APPLICATION (Product -Prepaints and Paint Composition)	BASIS FOR CONSTRUCTIVE REDUCTION TO PRACTICE AND WRITTEN DESCRIPTION IN APPLICANT'S ORIGINAL SPECIFICATION OF U.S. PATENT 6,221,145 (hereinafter '145 patent)	
	<p>Claim 1 and A1. A set of different, but mutually compatible fluid prepaints, sufficient to form at least one paint line, which set comprises:</p> <ul style="list-style-type: none"> (i) at least one opacifying prepaint comprising at least one opacifying pigment; 	<p>The claim 261 term “plurality” corresponds in meaning to the Friel claim 1 term “set”. The term “plurality” is supported by the '145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13.</p> <p>The claim 261 term “premixed aqueous composition” corresponds in meaning to the Friel claim 1 term “fluid prepaint”. The term “premixed aqueous compositions” is disclosed in column 2, lines 14-15. The 261 patent term “aqueous paint composition” is analogous to one of the plurality of functional paints in a “paint line” of the Friel claim 1. The term “aqueous paint composition” is explicitly supported in the title of the '145 patent.</p>	
		<p>a premixed pigment composition comprising a pigment;</p>	<p>The claim 261 term “premixed pigment composition” corresponds in meaning to the Friel claim 1 term “opacifying prepaint”. The term “premixed pigment composition” is disclosed at column 1, lines 65-66. The premixed pigment composition comprises a well known opacifying pigment, “titanium dioxide” as disclosed at column 1, lines 59-60 and column 2, lines 24-28.</p>

	<p>The claim 261 term “premixed low resin composition” corresponds in meaning to the Friel claim 1 term “extender prepaint”. The premixed low resin prepaint composition of the ‘145 patent has similar contents to those of the extender prepaint of Friel claim 1. For example, Friel discloses that the extender pigments may include calcium carbonate (limestone), silicates (which are clays), silica and others similar to those of the ‘145 patent original disclosure. In column 3, lines 30-32 the original ‘145 patent discloses diatomaceous earth. Column 3, lines 33-35 discloses ground limestone and calcined clay. Column 3, lines 29-38 support clay, ground limestone, and silica. Silica is a primary constituent of diatomaceous earth, which term “silica” is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of “extender pigment”.) However, these extender pigments should not be strictly limited to inclusion only in the premixed “low resin” or “extender” compositions, as may be appreciated from the slight variation in the claim 261 as compared to Friel claim 1.</p>
(ii) at least one extender prepaint comprising at least one extender pigment; and	<p>a premixed low resin composition, at least one of the premixed compositions comprising at least one of calcined clay, silica, ground limestone, diatomaceous earth, and mixtures thereof; and</p>

<p>(iii) at least one binder prepaint comprising at least one latex polymeric binder.</p>	<p>a premixed binder composition comprising a resin;</p> <p>The claim 261 term “premixed binder composition” corresponds in meaning to the Friel claim 1 term “binder prepaint”. The term “premixed binder composition” is supported by the original disclosure of the terms: “high resin content binder” and “high resin composition” used interchangeably in column 1, lines 50-54 and column 3, lines 39-48, respectively. Also, the term “premixed” is used generally to refer to all of the compositions including the “high resin” or “binder” composition as can be noted in column 1, lines 52-54. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resin. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.)</p> <p>wherein mixing a portion of the pigment composition with a portion of at least one of the low resin composition and the binder composition produces the aqueous paint composition from the premixed compositions.</p>
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<p>Claims 2 and A2. The set of prepaints of claim 1, wherein the number of prepaints is from 3 to 15.</p>	<p>Claim 262. (previously presented) The plurality of premixed aqueous compositions of claim 261, wherein the number of premixed compositions is 3 or more.</p> <p>Column 4, lines 46-51 discloses premixed compositions including a pigment composition, and one or more of: a dispersant thickening agent, a high resin content binder, a low resin content binder, and mixtures thereof mixed with the pigment composition. This recitation suggests <u>no</u> upper limit to the number of additional premixed compositions that can be mixed with the pigment composition. Column 3, lines 56-58 and lines 61-63; and first and third rows of the table of column 4, lines 6-13 disclose the specific number of three prepaints.</p>
<p>Claims 3 and A3. The set of prepaints of claim 1, wherein the opacifying prepaint further comprises at least one particulate polymeric binder adsorbed onto the opacifying pigment.</p>	<p>Claim 263. (currently amended) The plurality of premixed aqueous compositions of claim 261, wherein the premixed pigment composition further comprises at least one resin adsorbed onto the pigment.</p> <p>Column 2, line 67 to column 3, line 3 discloses the addition of a resin. The resin forms a resinous binder that inherently adsorbs onto the pigment when the resin comes into contact with the pigment in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having “no discernable settling” in column 2, line 67. This disclosure suggests the inherent property of the resinous binder. (One of the inherent material properties of the resinous binder “6183 made by BASF” is that it is particulate. This binder is disclosed in column 3, line 46.) Thus, the aspects of adsorption and polymeric not explicitly in the ‘145 patent are inherently met by the originally disclosed ‘145 patent.</p>

Claims 4 and A4. The set of prepaints of claim 1, wherein the extender prepaint further comprises at least one particulate polymeric binder absorbed onto the extender pigment.	<p>Claim 264. (currently amended) The plurality of premixed aqueous compositions of claim 261, wherein at least one of the premixed compositions further comprises at least one particulate resin absorbed onto the at least one of the calcined clay, silica, ground limestone, and mixtures thereof.</p> <p>Claim 49. The set of prepaints of claim 1 wherein the extender prepaint has a PVC of about 35% to about 100%.</p>	<p>Column 2, lines 6-8 and column 3, lines 29-30 disclose the resin. The resin forms a resinous binder that inherently adsorbs onto the pigments when the resin comes into contact with the pigments in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having “no discernable settling” in column 2, line 67. This disclosure suggests the inherent property of the resinous binder. (One of the inherent material properties of the resinous binder “6183 made by BASF” is that it is particulate. This binder is disclosed in column 3, line 46.) Thus, the aspects of adsorption and polymeric not explicitly in the ‘145 patent are inherently met by the originally disclosed ‘145 patent.</p> <p>Claim 265. (previously presented) The plurality of premixed aqueous compositions of claim 261, wherein the premixed low resin composition has a PVC of about 35% to about 100%.</p>	<p>A pigment solids content (PVC) of the low resin composition is in the range from about 35% to about 100%, is supported by the original disclosure of the ‘145, column 3, lines 40-43 which discloses that the binder resin content, (and thus the PVC), “can be varied” as desired so that the PVC content can be placed within the claimed range from 35% to 100%.</p> <p>It can be shown that each of the other prepaint compositions has a PVC that falls in the claimed range by the common engineering practice of conversion of weight percentages to volumes and a calculation in accordance with the well known definition of PVC:</p> $\text{PVC} = (\text{volume of pigments} + \text{volume of the extenders}) / (\text{volume of pigments} + \text{volume of the extenders} + \text{volume of the binders}) \text{ (See U.S. Patent No. 6,531,537, column 7, lines 36-39.)}$
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<p>Claims 38 and A44. A paint line produced by a process which comprises the steps of:</p> <ul style="list-style-type: none"> a. providing a set of different, but mutually compatible, fluid prepaints, which set comprises: 	<p>Claim 266. (currently amended) A plurality of paint products made by a method comprising:</p> <ul style="list-style-type: none"> a. providing a plurality of varied, but stable premixed aqueous compositions, which plurality comprises: <p>The Friel claim 38 term “paint line” is not explicitly recited in the disclosure of the ‘145 patent. However, the idea of forming a paint line by providing a range of sheens or paint qualities is disclosed in the original disclosure of the ‘145 patent in terms of a plurality of paint products. The plurality of paint products or a paint line is supported at column 1, lines 47-54; column 2, lines 14-18; column 3, lines 55-67; and column 4, lines 1-13.</p>
	<p>The claim 266 term “plurality of varied” corresponds in meaning to the Friel claim 38 term “set of different”. The term “plurality of varied” is supported by a disclosure in the ‘145 patent in column 3, lines 41-44 and column 4, lines 14-17 that indicates that each resin composition can be varied. Furthermore, the disclosure of the different constituent ingredients of each premixed composition set forth in column 2, line 15 through column 3, line 67 make it clear that each premixed composition is different or varies from the others. The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-18 and column 3, lines 49-51. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 31 of the Friel Patent. (See claims 1 and 89 for an explanation of how “stable” corresponds to “mutually compatible.”) The term “premixed aqueous compositions” is disclosed in column 2, lines 14-15.</p>

<p>(i) at least one opacifying prepaint comprising at least one opacifying pigment,</p>	<p>a premixed pigment composition comprising a pigment;</p> <p>The claim 266 term “premixed pigment composition” corresponds in meaning to the Friel claim 38 term “opacifying prepaint”. The term “premixed pigment composition” is disclosed at column 1, lines 65-66. The premixed pigment composition comprises a well known opacifying pigment, “titanium dioxide” as disclosed at column 1, lines 59-60 and column 2, lines 24-28.</p>
<p>(ii) at least one extender prepaint comprising at least one extender pigment, and</p>	<p>a premixed low resin composition, at least one of the compositions comprising at least one of calcined clay, silica, ground limestone, diatomaceous earth, and mixtures thereof;</p> <p>The claim 266 term “premixed low resin composition” corresponds in meaning to the Friel claim 38 term “extender prepaint”. The premixed low resin prepaint composition of the ‘145 patent has similar contents to those of the extender prepaint of Friel claim 1. For example, Friel discloses that the extender pigments may include calcium carbonate (limestone), silicates (which are clays), silica and others similar to those of the ‘145 patent original disclosure. In column 3, lines 30-32 the original ‘145 patent discloses diatomaceous earth. Column 3, lines 33-35 discloses ground limestone and calcined clay. Column 3, lines 29-38 support clay, ground limestone, and silica. Silica is a primary constituent of diatomaceous earth, which term “silica” is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of “extender pigment”.) However, these extender pigments should not be strictly limited to inclusion only in the premixed “low resin” or “extender” compositions, as may be appreciated from the slight variation in the claim 266 as compared to Friel claim 38.</p>

<p>(iii) at least one binder prepaint comprising at least one latex polymeric binder; and</p>	<p>a premixed binder composition comprising a resin; and</p> <p>The claim 266 term “premixed binder composition” corresponds in meaning to the Friel claim 38 term “binder prepaint”. The term “premixed binder composition” is supported by the original disclosure of the terms: “high resin content binder” and “high resin composition” used interchangeably in column 1, lines 50-54 and column 3, lines 39-48, respectively. Also, the term “premixed” is used generally to refer to all of the compositions including the “high resin” or “binder” composition as can be noted in column 1, lines 52-54. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resin. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.)</p>
<p>b. dispensing a predetermined amount of each of the prepaints into containers or applicators to form the paint line.</p>	<p>mixing a portion of the pigment composition with a portion of at least one of the low resin composition and the binder composition to produce the plurality of paint products from the premixed compositions.</p> <p>The Friel claim 38 recitation of “dispensing a predetermined amount of each of the prepaints into containers” is not explicitly provided in the original disclosure of the ‘145 patent. However, the claim 266 recitation of mixing the pigment composition with one of the other compositions “produces the aqueous paint composition from the premixed compositions” corresponds to a similar combining step to that of “dispensing” step of the Friel claim 38. This invention with its accompanying advantage listed in column 1, lines 35-49 had not been practised prior to the ‘145 patent. Hence, claim 261 is considered to be patentable.</p>

Claim 45. A set of different, but mutually compatible, fluid prepaints sufficient to formulate at least one paint line useful for forming pigmented and clear coatings, which set comprises:	<p>Claim 267. (currently amended) A plurality of varied, but stable, premixed aqueous compositions for formulating a plurality of paint products, the plurality of premixed aqueous paint compositions comprising:</p>	<p>The claim 267 term “plurality of varied” corresponds in meaning to the Friel claim 38 term “set of different”. The term “plurality of varied” is supported by a disclosure in the ‘145 patent of the different constituent ingredients of each premixed composition set forth in column 2, line 15 through column 3, line 67. This disclosure make it clear that each premixed composition is different or varies from the others. The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-18 and column 3, lines 49-51. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 31 of the Friel Patent. (See claims 1 and 89 for an explanation of how “stable” corresponds to “mutually compatible.”) The term “premixed aqueous compositions” is disclosed in column 2, lines 14-15. The term “plurality of paint products” or a paint line are supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13. Friel’s recitation of “clear coatings” attempts to obtain patent coverage for a desired result and does not provide a structural difference. (See MPEP 2111.02(II).) Therefore, the omission of “clear coatings” in Applicant’s claim 267 has the same or similar scope as does Friel’s claim 45.</p> <p>(i) at least one prepaint comprising at least one opacifying pigment; and</p> <p>a premixed pigment composition comprising a pigment;</p>
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(ii) at least two prepaints each of which comprises at least one latex polymeric binder.	at least two premixed compositions each of which comprises a resin.	Two binder prepaint compositions is supported by disclosure of a “high resin content binder and a low resin content binder” in column 1, lines 50-51. Column 3, lines 29-30 and lines 39-40 makes clear that the high and low resin compositions are aqueous compositions. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form latex polymeric binders.)
Claim 48. A method of forming at least one paint line, which method comprises the steps of:	Claim 268. (previously presented) A method of forming a plurality of paint products, which method comprises the steps of:	The claim 268 term “plurality of paint products” corresponds in meaning to the Friel claim 48 term “one paint line”. The Friel claim 48 term “paint line” is not explicitly recited in the disclosure of the ‘145 patent. However, the idea of forming a paint line by providing a range of sheens or paint qualities is disclosed in the original disclosure of the ‘145 patent in terms of a plurality of paint products. The plurality of paint products or a paint line is supported at column 1, lines 47-54; column 2, lines 14-18; column 3, lines 55-67; and column 4, lines 1-13.
(a) providing the set of prepaints of claim 45, 46 or 47; and	(a) providing a plurality of the premixed compositions of claim 267; and	See claims 45 and 267 for an explanation of the plurality of premixed compositions.
(b) dispensing a predetermined amount of each of the prepaints into containers or applicators to form the paint line.	(b) dispensing a portion of the premixed pigment composition and a portion of at least one of the at least two premixed compositions each having the resin into containers to form the plurality of paint products.	The term “dispensing” has support in the original disclosure of the ‘145 patent in column 3, lines 51-52. The term “container” has support in column 3, line 55.

Friel '537 PATENT CLAIMS and Friel '405 APPLICATION CLAIMS (application claims indicated by the letter "A" preceding the claim number.)	CORRESPONDING CLAIM/COUNT IN CURRENT APPLICATION (Method of Producing a Paint Line)	BASIS FOR CONSTRUCTIVE REDUCTION TO PRACTICE AND WRITTEN DESCRIPTION IN APPLICANT'S ORIGINAL SPECIFICATION OF U.S. PATENT 6,221,145 (hereinafter '145 patent)
Claims 5 and A5. A method of forming at least one paint line, comprising the steps of:	Claim 269. (currently amended) A method of producing a plurality of paint products, the method comprising:	The claim 269 term "plurality of paint products" corresponds in meaning to the Friel claim 48 term "one paint line". The Friel claim 48 term "paint line" is not explicitly recited in the disclosure of the '145 patent. However, the idea of forming a paint line by providing a range of sheens or paint qualities is disclosed in the original disclosure of the '145 patent in terms of a plurality of paint products. The plurality of paint products or a paint line is supported at column 1, lines 47-54; column 2, lines 14-18; column 3, lines 55-67; and column 4, lines 1-13.

<p>(a) providing a set of different, but mutually compatible, fluid prepaints, comprising:</p>	<p>providing a plurality of varied, but stable premixed aqueous compositions, which providing comprises:</p> <ul style="list-style-type: none"> (i) at least one opacifying prepaint, comprising at least one opacifying pigment; 	<p>The claim 269 term “plurality of varied” corresponds in meaning to the Friel claim 38 term “set of different”. The term “plurality of varied” is supported by a disclosure in the ‘145 patent in column 3, lines 41-44 and column 4, lines 14-17 that indicates that each resin composition can be varied. Furthermore, the disclosure of the different constituent ingredients of each premixed composition set forth in column 2, line 15 through column 3, line 67 make it clear that each premixed composition is different or varies from the others. The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-18 and column 3, lines 49-51. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 31 of the Friel Patent. (See claims 1 and 89 for an explanation of how “stable” corresponds to “mutually compatible.”) The term “premixed aqueous compositions” is disclosed in column 2, lines 14-15.</p>	<p>The claim 269 recitation of “premixing a pigment composition” corresponds in meaning to the Friel claim 38 recitation of “providing ... opacifying prepaint”. The term “premixed pigment composition” is disclosed at column 1, lines 65-66. The step of “premixing” is taught by context and is inherent in the original disclosure of the ‘145 patent and especially in the term “premixed pigment composition”. The premixed pigment composition comprises a well known opacifying pigment, “titanium dioxide” as disclosed at column 1, lines 59-60 and column 2, lines 24-28.</p>
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<p>ii) at least one extender prepaint comprising at least one extender pigment; and</p>	<p>The claim 269 recitation of “premixing a low resin composition” corresponds in meaning to the Friel claim 5 recitation of “providing ... extender prepaint”. The premixed low resin prepaint composition of the ‘145 patent has similar contents to those of the extender prepaint of Friel claim 1. For example, Friel discloses that the extender pigments may include calcium carbonate (limestone), silicates (which are clays), silica and others similar to those of the ‘145 patent original disclosure. In column 3, lines 30-32 the original ‘145 patent discloses diatomaceous earth. Column 3, lines 33-35 discloses ground limestone and calcined clay. Column 3, lines 29-38 support clay, ground limestone, and silica. Silica is a primary constituent of diatomaceous earth, which term “silica” is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of “extender pigment”.) However, these extender pigments should not be strictly limited to inclusion only in the premixed “low resin” or “extender” compositions, as may be appreciated from the slight variation in the claim 269 as compared to Friel claim 5. The step of “premixing” the low resin composition is taught by context and is inherent in the original disclosure of the ‘145 patent and especially in the recitation of the terms “low resin composition” in column 3, lines 29-30 and “premixed in column 3, lines 6-7.</p>
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<p>(iii) at least one binder prepaint comprising at least one latex polymeric binder; and</p>	<p>premixing a binder composition comprising a resin; and</p> <p>The claim 269 recitation of “premixing a binder composition” corresponds in meaning to the Friel claim 5 recitation of “providing ... binder prepaint”. The term “premixed binder composition” is supported by the original disclosure of the terms: “high resin content binder” and “high resin composition” used interchangeably in column 1, lines 50-54 and column 3, lines 39-48, respectively. Also, the term “premixed” is used generally to refer to all of the compositions including the “high resin” or “binder” composition as can be noted in column 1, lines 52-54. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resin. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.) The step of “premixing” the binder composition is taught by context and is inherent in the original disclosure of the ‘145 patent and especially in the supporting portions for the term “premixed binder composition” set forth above.</p>
	<p>(b) dispensing a predetermined amount of each of the prepaints into containers or applicator(s) to form the paint line.</p> <p>mixing a portion of the pigment composition with a portion of at least one of the low resin composition and the binder composition in a container to produce an aqueous paint product of the plurality of paint products from the premixed compositions.</p> <p>The Friel claim 5 recitation of “dispensing a predetermined amount of each of the prepaints into containers” is not explicitly provided in the original disclosure of the ‘145 patent. However, the claim 269 recitation of mixing the pigment composition with one of the other compositions “produces the aqueous paint composition from the premixed compositions” corresponds to a similar combining step to that of “dispensing” step of the Friel claim 5. This invention with its accompanying advantage listed in column 1, lines 35-49 had not been practiced prior to the ‘145 patent. Hence, claim 269 is considered to be patentable.</p>

<p>Claims 7 and A7. The method of claim 5, further comprising the step of mixing the prepaint before, while, or after they are dispensed into the containers.</p>	<p>Claim 270. (previously presented) The method of claim 269, further comprising the step of mixing the premixed compositions before, while, or after they are dispensed into the containers.</p> <p>Column 4, lines 50-53 recite “and mixtures thereof” in support of mixing the prepaint compositions before, and “simultaneously or sequentially mixing” which supports mixing while and after the premixed compositions are dispensed into the containers. Also, Column 3, lines 63-67 disclose “balance between the components.” Column 3, lines 51-55 discloses “discharge into the point of sale container.” Column 3, lines 51-55 discloses that “each storage reservoir is coupled through fluid pumps and appropriate valving to dispensing outlets with the discharge therefrom being directed into the point of sale container.” The claim language “before during or after” contemplates all species in a genus of the time of mixture.</p> <p>Applicant’s disclosure covers the genus.</p>
<p>Claims 8 and A8. The method of claim 5, further comprising the step of mixing the prepaint before or while they are dispensed into the applicator(s).</p>	<p>Claim 271. (previously presented) The method of claim 269, further comprising the step of mixing the premixed compositions before or while they are dispensed into the containers.</p> <p>Column 4, lines 50-53 recite “and mixtures thereof” in support of mixing the prepaint compositions before, and “simultaneously or sequentially mixing” which supports mixing while the premixed compositions are dispensed into the containers. All “applicators” (see the Friel Claim 8), must necessarily include “containers”. Although all “containers” do not need to be “applicators” if is inherent that paint must be applied.</p>

<p>Claims 9 and A9. The method of claim 5, further comprising the step of adjusting the viscosity of the prepaints before, while, or after they are into the containers.</p> <p>Claim 272. (previously presented) The method of claim 269, further comprising the step of adjusting the viscosity of the premixed compositions before, while, or after they are dispensed into the containers.</p>	<p>A viscosity controlling agent adjusts the viscosity of the pigment prepaint composition as set forth in column 2, lines 36-38. The viscosity of each of the prepaint compositions is adjusted by the addition of thickeners, dispersants, and/or coalescents before the prepaint compositions are dispensed into the containers when the prepaint compositions are formed as disclosed in column 4, line 40 for the pigment composition; column 3, lines 21-29 for the dispersant thicker composition; column 3, lines 34-37 for the low resin composition; and column 3, lines 40-41 for the high resin composition. The viscosity of each of the prepaint compositions is also adjusted by mixing the prepaint compositions with each other which may occur while the prepaints are being dispensed into the containers or after they are dispensed into the containers, which is supported by “simultaneously or sequentially mixing” as disclosed in Column 4, lines 51-52. (See claims 7 and 116 above.)</p>
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Claims 10 and A10. The method of claim 5, further comprising the step of adjusting the viscosity of the dispensed prepaints before or while they are dispensed into the applicator(s).	<p>Claim 273. (previously presented) The method of claim 269, further comprising the step of adjusting the viscosity of the premixed compositions before or while they are dispensed into the containers.</p> <p>A viscosity controlling agent adjusts the viscosity of the pigment prepaint composition as set forth in column 2, lines 36-38. The viscosity of each of the prepaint compositions is adjusted by the addition of thickeners, dispersants, and/or coalescents before the prepaint compositions are dispensed into the containers when the prepaint compositions are formed as disclosed in Column 4, line 40 for the pigment composition; Column 3, lines 21-29 for the dispersant thickener composition; Column 3, lines 34-37 for the low resin composition; and Column 3, lines 40-41 for the high resin composition. The viscosity of each of the prepaint compositions is also adjusted by mixing the prepaint compositions with each other which may occur while the prepaint compositions are being dispensed into the containers, which is supported by “simultaneously or sequentially mixing” recited in Column 4, lines 51-52. (Also see claims 8 and 119 above.)</p>
Claims 11 and A11. The method of claim 5, further comprising the step of adding at least one additive that enhances application or final performance of the paint.	<p>Claim 274. (previously presented) The method of claim 269, further comprising the step of adding at least one additive that enhances application or final performance of the aqueous paint product.</p> <p>Adding additives is supported by disclosure at column 2, lines 39-61; column 2, line 67 to column 3, line3; column 3, lines 21-22; column 3, lines 34-37; and column 3, lines 40-41. The disclosed additives enhance application or final performance of the paint products.</p>
Claims 13 and A13. The method of claim 11, wherein the additive is a thickener.	<p>Claim 275. (previously presented) The method of claim 274, wherein the additive is a thickener.</p> <p>Thickeners are added as set forth in column 2, lines 2, 45, 57; column 3, lines 10, 12, 17, 35-36; and claim 1, column 4, line 33, and claim 4, line 58.</p>

<p>Claims 14 and A14. The method of claim 5, further comprising the step of adding at least one colorant to the prepaints.</p>	<p>Claim 276. (previously presented) The method of claim 269, further comprising the step of adding at least one colorant to the premixed compositions.</p>	<p>Adding at least one colorant is supported by disclosure of the well known step of providing neutral or base color in column 1, lines 11-12. The colorant may be added to the prepaint compositions whether they have been mixed to form a paint product or not. The steps of adding the various pigments as set forth in column 2, lines 25-27 and lines 32-34; and column 3, lines 30-34 also include the step of adding a colorant to the prepaint compositions.</p>
<p>Claims 15 and A15. The method of claim 5, wherein the opacifying prepaint further comprises at least one particulate polymeric binder absorbed onto the opacifying pigment.</p>	<p>Claim 277. (currently amended) The method of claim 269, wherein the pigment composition further comprises at least one resin absorbed onto the pigment.</p>	<p>Column 2, line 67 to column 3, line 3 discloses the resinous binder. The resinous binder inherently adsorbs onto the pigment when the resinous binder comes into contact with the pigment in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having “no discernable settling” in column 2, line 67. This disclosure suggests the inherent property of the resinous binder. (One of the inherent material properties of the resinous binder “6183 made by BASF” is that it is particulate. This binder is disclosed in column 3, line 46.)</p>
<p>Claims 16 and A16. The method of claim 5, wherein the extender prepaint further comprises at least one particulate polymeric binder absorbed onto the extender pigment.</p>	<p>Claim 278. (currently amended) The method of claim 269, wherein at least one of the premixed compositions further comprises a resin adsorbed onto the at least one of the calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof.</p>	<p>Column 2, lines 6-8 and column 3, lines 29-30 disclose the resinous binder. The resinous binder inherently adsorbs onto the pigments when the resinous binder comes into contact with the pigments in an aqueous solution. This is evidenced by the specification which describes the pigment dispersion as having “no discernable settling” in column 2, line 67. This disclosure suggests the inherent property of the resinous binder. (One of the inherent material properties of the resinous binder “6183 made by BASF” is that it is particulate. This binder is disclosed in column 3, line 46.)</p>

<p>Claims 17 and A17. The method of claim 5, wherein the method is carried out at a paint manufacturing facility.</p>	<p>Claim 279. (previously presented) The method of claim 269, wherein the method is carried out at a paint manufacturing facility.</p> <p>Column 1, lines 23-25 discloses the “manufacture of p[aint] at the central facility” as a known step. However, the paint manufacturing facility at which paint in accordance with the present invention will typically be manufactured is at the point of sale as indicated in Column 1, lines 47-49; Column 2, lines 8-10; Column 3, lines 6-8; and Column 4, lines 1-3.</p>
<p>Claims 18 and A21. The method of claim 5, wherein the number of prepaints is from 4 to 15.</p>	<p>Claim 280. (previously presented) The method of claim 269, wherein the number of premixed compositions is 4 or more.</p> <p>Column 4, lines 46-51 discloses prepaints or premixed compositions including a pigment composition, and one or more of: a dispersant thickening agent, a high resin content binder, a low resin content binder, and mixtures thereof mixed with the pigment composition. This recitation suggests no upper limit to the number of additional prepaints or premixed compositions that can be mixed with the pigment prepaint. This disclosure also explicitly lists four premixed compositions and the possibility of more premixed compositions formed by mixing the first four. Column 3, lines 56-61; and the second row of the table of column 4, lines 6-13 disclose the specific number of four prepaints.</p>

<p>Claim 50. The method of forming at least one paint line of claim 5 wherein the extender prepaint has a PVC of about 35% to about 100%.</p>	<p>Claim 281. (previously presented) The method of claim 269, wherein the low resin composition has a PVC of about 35% to about 100%.</p> <p>A pigment solids content (PVC) of the low resin composition is in the range from about 35% to about 100%, is supported by the original disclosure of the '145, column 3, lines 40-43 which discloses that the binder resin content, (and thus the PVC), "can be varied" as desired so that the PVC content can be placed within the claimed range from 35% to 100%.</p> <p>It can be shown that each of the other prepaint compositions has a PVC that falls in the claimed range by the common engineering practice of conversion of weight percentages to volumes and a calculation in accordance with the well known definition of PVC:</p> $\text{PVC} = (\text{volume of pigments} + \text{volume of the extenders}) / (\text{volume of pigments} + \text{volume of the extenders} + \text{volume of the binders}) \text{ (See U.S. Patent No. 6,531,537, column 7, lines 36-39.)}$
<p>(Friel Application '405) Claim A18. The method of claim 5 or claim 6, wherein the method is carried out at a point-of-sale.</p>	<p>Claim 282. (previously presented) The method of claim 269, wherein the method is carried out at the point-of-sale.</p> <p>The method of manufacturing paint in accordance with the present invention will typically be carried out at the point of sale as indicated in Column 1, lines 47-49; Column 2, lines 8-10; Column 3, lines 6-8; and Column 4, lines 1-3.</p>

<p>(Friel Application '405) Claim A19. The method of claim 5 or claim 6, wherein the method is carried out at a point-of-use.</p>	<p>Claim 283. (Previously presented) The method of claim 269, wherein the method is carried out at the point-of-use.</p>	<p>The term of "use" is supported by the original disclosure in column 1, lines 50-54. Point-of-use is inherently supported by the original disclosure of the '145 patent in which "use" of the premixed compositions or prepaints for making a paint product frequently indicates a location of use. Using the premixed compositions in accordance with the present invention occurs at the "point" of sale, which is inherently a "point-of-use" since the premixed compositions or prepaints are being used to manufacture the paint. (See the disclosure in the '145 patent in Column 1, lines 47-49; Column 2, lines 8-10; Column 3, lines 6-8; and Column 4, lines 1-3.) (Note that there is no definition of "point-of-use" by Friel. See the request for Interference, page 64, lines 13-27.)</p>
<p>(Friel Application '405) Claim A20. The method of claim 5 or claim 6, wherein the method is controlled by a computer.</p>	<p>Claim 284. (Currently amended) The method of claim 269, wherein the method is controlled in accordance with programmed dispensing.</p>	<p>The term "controlled by a computer" of claims 156, 157, and 158 is supported by the original disclosure of column 4, lines 1-13 of the Applicant's patent. On line 1, the Applicant statement that the "compositions [are] suitable for programmed dispensing" refers to computer controlled dispensing as is evidenced by the precise weight percentages required in the Table of lines 6-13.</p>

Claims 6 and A6. A method of forming a range of paints, the range comprising at least two paint lines, which method comprises the steps of:	<p>Claim 285. (currently amended) A method of producing a plurality of paint products and variations of the plurality of paint products, the method comprising:</p>	<p>The term “range” in reference to paints is supported in column 1, lines 47-49. However, the claim 285 term “plurality of paint products” also corresponds in meaning to the Friel claim 6 term “range of paints”. The plurality of paint products or a paint line is supported in the ‘145 patent at column 1, lines 47-54; column 2, lines 14-18; column 3, lines 55-67; and column 4, lines 1-13. The term “paint products” is explicitly supported in column 2, lines 61-65 in which is disclosed that the present invention enables a wide scope of paint products. The term “variations” is supported by disclosure in the original disclosure of the ‘145 patent at column 4, lines 14-17. Similar terminology that may be used interchangeably includes “variety of paint compositions” which is supported by disclosure in column 2, line 30. The term “plurality of varied” and the idea of plural paint lines as recited in Friel’s claim 6 is supported by a disclosure in the ‘145 patent in column 3, lines 41-44 and column 4, lines 14-17 that indicates that each resin composition can be varied. Varying the relative amount of resin in this way is a known way of varying the quality of the resultant paint products. Therefore, the original disclosure of the ‘145 patent teaches forming a plurality of paint lines.</p>
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<p>(a) providing a set of different, but mutually compatible, fluid prepaints sufficient to formulate at least two paint lines, which set comprises:</p>	<p>(a) providing a plurality of varied, but stable premixed aqueous compositions for producing the plurality of paint products and the variations of the plurality of paint products, which plurality of premixed aqueous compositions comprises:</p>	<p>(i) at least one opacifying prepaint comprising at least one opacifying pigment;</p>	<p>The disclosure of the different constituent ingredients of each prepaint set forth in columns 2, line 15 through column 3, line 67 makes it clear that each prepaint is different or varies from the others. The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-18 and column 3, lines 49-51. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 6 of the Friel Patent. (See the explanation of how “stable” encompasses “mutually compatible” with respect to claims 1 and 89 above.) The term “premixed aqueous compositions” is disclosed in column 2, lines 14-15.</p> <p>Column 1, lines 49-50 and lines 59-67; and column 2, lines 20-67, describe the make up of a pigment composition with an example including the pigment, titanium dioxide. (See column 2, lines 24-27 and lines 30-33.) Since a pigment is a substance such as titanium dioxide added to a paint, it would inherently follow that the added substance would block light and thus provide the property to opacify. Column 1, line 27 states that “The pigment composition is a composition with a high percentage of solids suspended in water.” Solids in suspension inherently opacify.</p>
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<p>(ii) at least one extender prepaint comprising at least one extender pigment;</p>	<p>(ii) a premixed low resin composition, at least one of the premixed compositions comprising at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof;</p>	<p>Column 2, lines 30-37 discloses a mixture of calcined clay and silica. Column 3, lines 30-32 disclose diatomaceous earth. Column 3, lines 33-35 disclose ground limestone and calcined clay. Friel discloses that the extender pigments include calcium carbonate (limestone), silica and others similar to Applicant. Column 3, lines 29-38 support calcined clay, ground limestone, and silica. Silica is a primary constituent of diatomaceous earth, which term “silica” is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of “extender pigment”.)</p>
	<p>(iii) a premixed binder prepaint comprising a resin; and</p>	<p>Binder prepaint composition is supported by the original disclosure of the terms: “high resin content binder”, “high resin component”, and “high resin composition” used interchangeably in column 1, lines 50-51; column 2, lines 5-6; and column 3, lines 39-48. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resin containing binder. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.)</p>

	<p>(iv) at least one additional, different premixed composition from the group consisting of the compositions of (i), (ii), (iii), and mixtures thereof; consisting of (i), (ii), and (iii); and</p> <p>(iv) an additional different premixed composition used in the formulation of a paint product and the term “different” is provided by the original disclosure of the ‘145 patent at Column 3, lines 41-44 which indicates that each resin composition can be varied to achieve different finish characteristics; and Column 3, lines 65-67 which states that “[t]he actual balances between the components for the different finishes can be varied in accordance with the needs of the purchaser for a particular type of finish.” Support for an additional, different prepaint composition is further provided in Column 4, lines 46-51 which discloses that each of the prepaint compositions listed in items (i)-(iii) and mixtures thereof may be combined to form the paint products. Disclosure of “mixtures thereof” provides the “at least one additional, different pigment, low resin, or high resin prepaint composition” since any mixture of the prepaint compositions listed in Column 4, lines 46-51 will necessarily provide an “additional” and “different” prepaint composition.</p>
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	<p>(b) dispensing a predetermined amount of each of the prepaints into containers or applicator(s) to form the range of paints.</p>	<p>(b) mixing a portion of the pigment composition with a portion of at least one of the low resin composition, the binder composition, and the additional different composition in a container to produce the variations of the plurality of paint products.</p>	<p>The Friel claim 6 term “dispensing” is explicitly in the original disclosure of the ‘145 patent at column 3, lines 52-53, and dispensing a predetermined amount of each of the prepaint compositions into containers is supported at column 3, lines 51 through 55. However, the claim 285 terminology “mixing” corresponds better to the context of the Friel claim 6 recitation “dispensing ... each of the prepaints into containers ... to form the range of paints.” Clearly the ‘145 patent teaches dispensing the premixed compositions in the container in column 3, lines 50-55, and explicitly discloses mixing in Column 3, lines 25-29 and Column 4, lines 52-53. The step of mixing results in forming the plurality of paint products, and varying the amount of resin in the premixed compositions and/or providing one or more additional premixed compositions in the compositions being intermixed will inherently provide the “variations of the paint products” or “range of paints”. (See also, column 3, line 56 to column 4, line 13, which shows variations of paint products or a range of paints.)</p>
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Friel '537 PATENT CLAIMS and Friel '405 APPLICATION CLAIMS (application claims indicated by the letter "A" preceding the claim number.)	CORRESPONDING CLAIM/COUNT IN CURRENT APPLICATION (A Pigment Prepaint Composition)	BASIS FOR CONSTRUCTIVE REDUCTION TO PRACTICE AND WRITTEN DESCRIPTION IN APPLICANT'S ORIGINAL SPECIFICATION OF U.S. PATENT 6,221,145 (hereinafter '145 patent)
<p>Claims 19 and A22. A fluid opacifying prepaint useful for formulating a one pack, pigmented latex paint having a volume solids content of about 30% to about 70% and a Stormer viscosity of about 50 to about 250 KU, which prepaint contains other paint ingredients, which prepaint consists essentially of:</p> <p>Claim 301. (currently amended) A premixed aqueous pigment composition for forming a paint product, the premixed composition comprising:</p>	<p>The term "premixed aqueous compositions" is disclosed in column 2, lines 14-15. There are several premixed aqueous compositions including the "pigment composition", as set forth in column 1, lines 49-53. With regard to the Friel claim 19 term "one pack", Friel's disclosure fails to define this term. As such, it appears to have little or no meaning in the claims and has been omitted in corresponding claim 301 of the present application. The term "latex" is not explicitly recited in the original disclosure of the '145 patent, and has been omitted from claim 301. However, the paint described in the '145 patent is inherently a "latex" paint. This is so because the prepaint compositions are "fluid" based on the water component in each. (See column 2, lines 30-32; column 3, lines 10-12; column 3, lines 29-30; and column 3, lined 39-41.) Column 3, lines 39-48 also makes clear that the high resin component or binder prepaint is an aqueous composition. As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex paint. The volume solids content of the particular range recited in the Friel claim 19 is not explicitly described in the original disclosure of the '145 patent. As such, the recitation of this range has been omitted from claim 301</p>	

	<p>in order to avoid the possibility of a rejection based on lack of antecedent basis in the original disclosure. However, Applicant's pigmented paint has been calculated to inherently have a volume solids content of about 30% to about 70%. It should be noted that this range is very broad so as hardly to be a limitation. Although the relative quantities of the various ingredients are set forth in weight percentages in Applicant's original disclosure, these values can be converted to volume solids content and shown to reside in the claimed range based on weights and percentages shown in the table in column 4 and the maximum and minimum values of pigment and binder resin. (See column 2, lines 25-37 and column 3, lines 29-41.) The recited range of Stormer viscosity recited to be from 50 KU to 250KU is a broad range comparable to a range from the viscosity of water to that of hardened concrete. This range is considered to be met inherently by the original disclosure of the '145 patent since the materials in the pigment composition present in their suggested percentages will fall within this range of viscosity.</p>	<p>Column 1, lines 49-50 and lines 59-67; and column 2, lines 20-67, describe the make up of a pigment composition with an example including the pigment, titanium dioxide. (See column 2, lines 24-27 and lines 30-33.) Since a pigment is a substance such as titanium dioxide added to a paint, it would inherently follow that the added substance would block light and thus provide the property to opacify. Column 1, line 27 states that "The pigment composition is a composition with a high percentage of solids suspended in water." Solids in suspension inherently opacify.</p>
(i) at least one opacifying pigment,		

(ii) at least one dispersant,	a dispersant,	Column 2, lines 41-56 discloses a dispersant in the premixed pigment composition.
(iii) at least one thickener, and	a thickener, and	Column 2, lines 41-47 and 57-60 disclose a thickener in the premixed pigment composition.
(iv) water;	water;	Column 2, lines 31-33 disclose water in the premixed pigment composition.
wherein the dispersant(s) and the thickener(s) are stable when mixed with the pigment(s) and with the other paint ingredients.		The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-18 and column 3, lines 49-51. Column 1, lines 64-67 and column 2, lines 65-67 specifically support the term “stable” as it is applied to the premixed pigment composition. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 6 of the Friel Patent. (See the explanation of how “stable” encompasses “mutually compatible” with respect to claims 1 and 89 above.) The term “ingredients” is not explicitly recited in the ‘145 patent. However, an analogous term “contents” has been substituted for the term ingredients in the otherwise analogous claim 260 of the present application. The term “content” is supported in the original ‘145 disclosure at column 1, lines 49-51 in which “content” refers to a constituent ingredient for two of the prepaint compositions. Thus, “contents” are disclosed. Several other constituent ingredients are also described as making up the prepaint compositions, and thus these ingredients are also “contents”.

<p>Claims 20 and A23. The prepaint of claim 19, wherein the volume solids content is about 35% to about 50% and the Stormer viscosity is about 60 to about 150 KU.</p>	<p>Claim 302. (Canceled)</p> <p>The volume solids content of the particular range recited in the Friel claim 19 is not explicitly described in the original disclosure of the ‘145 patent. As such, the recitation of this range has been omitted by cancellation of claim 302 in order to avoid the possibility of a rejection based on lack of antecedent basis in the original disclosure. However, Applicant’s pigmented paint has been calculated to inherently have a volume solids content of about 35% to about 50%. The broad range from about 35% to about 50% of volume solids claimed is inherent in the original disclosure of the ‘145 patent. The Stormer viscosity of about 60 to about 150 KU is also inherent since the typical viscosity for the paint of the present invention is around 90 to 100 KU, but may vary depending upon the mixture.</p>
<p>Claims 24 and A27. The prepaint of claim 19 or 21, wherein the opacifying pigment is a material selected from the group consisting of titanium dioxide, zinc oxide, lead oxide, a synthetic polymer pigment, and mixtures thereof.</p>	<p>Claim 303. (currently amended) The premixed aqueous composition of claim 301, wherein the pigment comprises titanium dioxide.</p> <p>The original disclosure explicitly supports the pigment comprising “titanium dioxide” at Column 2, lines 24-27 and lines 30-33, which discloses the exemplary pigment composition as a “pigment” containing constituent that contains “titanium dioxide”. (See claims 19 and 208 for further explanations of how the original disclosure supports “titanium dioxide”.) Claim 303 includes only a partial list of the pigments of Friel claim 24. This is because claim 24 of Friel recites a laundry list including some specific pigments that are not expressly disclosed in the original disclosure of the ‘145 patent. The remaining specific pigments recited in claim 24 of the Friel patent are well known equivalents or substitutes for the “titanium dioxide” disclosed in the ‘145 patent.</p>

Claim 27 and A30. The prepaint of claim 19 or 21, wherein the dispersant is a selected from the group consisting of 2-amino-2-methyl-1-propanol; dimethylaminoethanol; potassium tripolyphosphate; trisodium polyphosphate; citric acid; polyacrylic acid; diolefin/maleic anhydride adducts; hydrophobically-modified polyacrylic acid, hydrophilically-modified polyacrylic acid, and salts thereof; and mixtures thereof.	Claim 304. (previously presented) The premixed aqueous composition of claim 301, wherein the dispersant comprises potassium tripolyphosphate.	The original disclosure explicitly supports the dispersants comprising potassium tripolyphosphate (KTTTP) at Column 2, lines 39-53, which discloses the exemplary pigment composition as including potassium tripolyphosphate (KTTTP). Claim 304 includes only a partial list of the dispersants of Friel claim 27. This is because claim 27 of Friel recites a laundry list including several specific dispersants that are not expressly disclosed in the original disclosure of the '145 patent. The remaining specific dispersants recited in claim 27 of the Friel patent are well known substitutes for the "potassium tripolyphosphate" disclosed in the '145 patent.
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	<p>The original disclosure explicitly supports the thickener comprising a “cellulosic” at Column 2, line 57-60, which discloses the exemplary pigment composition as including a “cellulosic” for its thickener.</p> <p>Claim 305 includes only a partial list of the thickeners of Friel claim 28. This is because claim 28 of Friel recites a laundry list including several specific thickeners that are not expressly disclosed in the original disclosure of the ‘145 patent. The remaining specific thickeners recited in claim 28 of the Friel patent are well known substitutes for the “cellulosic” disclosed in the ‘145 patent.</p>
Claims 28 and A31. The prepaint of claim 19 or 21, wherein the thickener is a selected from the group consisting of an alkali-soluble or alkali-swelling emulsion (ASE), a hydrophobically-modified, alkali-soluble emulsion (HASE), a hydrophobically-modified ethylene oxide-urethane polymer (HEUR), a cellulosic, a hydrophobically-modified cellulosic, a hydrophobically-modified polyacrylamide, a polyvinyl alcohol, a fumed silica, an attapulgite clay, a titanate chelating agent, and mixtures thereof.	<p>Claim 305. (previously presented) The premixed aqueous composition of claim 301, wherein the thickener comprises a cellulosic.</p>

Claims 30 and A34. The prepaint of claim 19 or 21, further consisting essentially of at least one additive selected from the group consisting of an acid, a base, a defoamer, a coalescent, a cosolvent, a mildewcide, a biocide, and an antifreeze agent, with the additive being present in an amount of less than about 10% by weight, based on the total weight of the prepaint.	<p>Claim 306. (Currently amended) The premixed aqueous composition of claim 301, further consisting essentially of at least one additive comprising a viscosity controlling agent, with the additive being present in an amount of less than about 10% by weight, based on the total weight of the premixed aqueous composition.</p>	<p>The original disclosure supports the premixed pigment composition further consisting essentially of at least one additive comprising a “viscosity controlling agent” in an amount of 10% at Column 1, lines 57 and 63-64; column 2, lines 36-38. The term “additive” finds explicit antecedent basis in column 2, lines 61-64. The percentage of 10% is based on the weight of the premixed pigment composition as set forth in column 4, lines 58-60. While the original disclosure does not explicitly provide for the “viscosity controlling agent” to be less than about 10% for the pigment composition, one species of viscosity controlling agent, “a coalescent”, is disclosed in a percentage less than 10% for the premixed dispersant-thickener composition at column 3, lines 21-22, which discloses that an “additional additive is a coalescent in an amount of 4 to 5 weight percent.” Thus, the recitation in Claim 306 of “10% or less” is supported by the ‘145 patent. Furthermore, Friel’s recitation of “less than about 10% is considered to be an obvious variation. The term “viscosity controlling agent” is considered to encompass at least several of the terms listed in corresponding Friel claim 28 because several of the Friel claim 28 terms are well known additives that are specifically for controlling viscosity. Thus, even though claim 306 explicitly lists only one broad term, “viscosity controlling agent” for the additive, the several specific additives of the Friel claim 28 that are not expressly disclosed in the original disclosure of the ‘145 patent are nevertheless well known specific examples of and/or compliments to the “viscosity controlling agent” disclosed in the ‘145 patent. Therefore, the additives not listed in the original ‘145 are considered to be obvious.</p>
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Claims 32 and A37. A set of two different, but mutually compatible binder prepaints useful for formulating a latex paint, which set comprises:	<p>Claim 307. (currently amended) A plurality of varied, but stable premixed aqueous compositions useful for formulating a paint product, which plurality comprises:</p> <p>The term “plurality” is supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13. The claim 269 term “plurality of varied” corresponds in meaning to the Friel claim 38 term “set of different”. The term “plurality of varied” is supported by a disclosure in the ‘145 patent in column 3, lines 41-44 and column 4, lines 14-17 that indicates that each resin composition can be varied. Furthermore, the disclosure of the different constituent ingredients of each premixed composition set forth in column 2, line 15 through column 3, line 67 make it clear that each premixed composition is different or varies from the others. The term “premixed aqueous compositions” is disclosed in column 2, lines 14-15. While not relied upon in claim 307, the number of “two” prepaint compositions is supported by the original disclosure of the ‘145 patent in column 1, lines 49-54 and in the Abstract. The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-18 and column 3, lines 49-51. Column 1, lines 64-67 and column 2, lines 65-67 specifically support the term “stable” as it is applied to the premixed pigment composition. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 6 of the Friel Patent. (See the explanation of how “stable” encompasses “mutually compatible” with respect to claims 1 and 89 above.)</p> <p>(a) the opacifying prepaint of claim 19 or 21; and</p>
	See explanation regarding claims 19 and 301 above.

	<p>(b) a latex polymeric binder prepaint having volume solids content of about 25% to about 70% or a Brookfield viscosity of less than about 100,000 centipoise at a shear rate of 1.25 reciprocal seconds, which prepaint consists essentially of a water-borne latex polymeric binder having a Tg of about -430.degree. C. to about 70.degree. C. and water;</p>	<p>Binder prepaint composition is supported by the original disclosure of the terms: "high resin content binder", "high resin component", and "high resin composition" used interchangeably in column 1, lines 50-51; column 2, lines 5-6; and column 3, lines 39-48. Column 2, lines 6-8 and column 3, lines 29-30 disclose the resin containing or resinous binder. Column 3, lines 39-48 also makes clear that the high resin component or binder is an aqueous composition. (As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex polymeric binder.) The original disclosure of the '145 patent has a basis for the volume solids content for the high resin composition in the range from about 25% to about 70% as has been calculated from the relative ingredient weight percentage contents of the original disclosure. Furthermore, the amounts of water and resin in the high and low resin compositions can be varied as set forth in column 3, lines 41-43, thus providing further variation of the volume solids content. Like the broad range of solids content percentages, the Brookfield viscosity less than 100,000 centipoise at a shear rate of 1.25 reciprocal seconds encompasses the viscosities that could be achieved by the binder prepaint of the '145 original disclosure. Likewise, the resin containing binder of the original disclosure has a Tg that falls within the broad range of about -430 degrees C to about 70 degrees C. While not explicitly disclosed, and omitted from claim 307, the volume solids content, Brookfield viscosity, and Tg of the binder recited in claims 32 are inherent in the binder prepaint composition of the original disclosure of the '145 patent.</p>
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<p>wherein the prepaint ingredients are mutually compatible with each other and with the ingredients of the other prepaint in the set.</p>	<p>wherein the contents of the premixed compositions are stable when mixed with each other and with the contents of the other premixed compositions of the plurality.</p>	<p>The term “ingredients” is not explicitly recited in the ‘145 patent. However, an analogous term “contents” has been substituted for the term ingredients in the otherwise analogous claim 260 of the present application. The term “content” is supported in the original ‘145 disclosure at column 1, lines 49-51 in which “content” refers to a constituent ingredient for two of the prepaint compositions. Thus, “contents” are disclosed. Several other constituent ingredients are also described as making up the prepaint compositions, and thus these ingredients are also “contents”. The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-18 and column 3, lines 49-51, as well as other description in column 1, lines 64-67. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 19 of the Friel Patent. (See claims 1 and 89 for an explanation of how “stable” corresponds to “mutually compatible.”)</p>
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Claims 33 and A38. The set of prepaints of claim 32, wherein the binder prepaint has a volume solids content of about 30 to about 65% and a Brookfield viscosity of about 100 to about 50,000 centipoise at a shear rate of 1.25 reciprocal seconds, and consists essentially of a water-borne polymeric binder having a Tg of about -10 to about 60 degree C.

Claim 308. (Cancelled)

The original disclosure of the '145 patent does not explicitly describe the premixed binder composition in terms of volume solids content, Brookfield viscosity, and Tg. Therefore, these details have been omitted by cancellation of claim 308. However, the '145 patent has support for Friel claim 33 recitation of volume solids content for the premixed binder composition in the range from about 30% to about 65% as has been calculated from the relative ingredient weight percentage contents of the original disclosure. Furthermore, the amounts of water and resin in the high and low resin compositions can be varied as set forth in column 3, lines 41-43, thus providing further variation of the volume solids content. Like the broad range of solids content percentages, the Brookfield viscosity of about 100 to about 50,000 centipoise at a shear rate of 1.25 reciprocal seconds still encompasses the viscosities of the binder prepaint of the '145 original disclosure. Likewise, the resin containing binder of the original disclosure has a Tg that falls within the broad range of about -10 degrees C to about 60 degrees C. While not explicitly disclosed, the volume solids content, Brookfield viscosity, and Tg of the binder recited in Friel claim 33 are inherent in the binder prepaint composition of the original disclosure of the '145 patent.

<p>Claims 34 and A39. The set of prepaints of claim 32, wherein the binder prepaint further consists essentially of at least one additive selected from the group consisting of an acid, a base, a defoamer, a coalescent, a cosolvent, a mildewcide, a biocide, and antifreeze agent, the additive being present in an amount of less than about 10% by weight, based on the total weight of the prepaint.</p>	<p>Claim 309. (currently amended) The plurality of premixed aqueous compositions of claim 307, wherein the premixed binder composition further consists essentially of at least one additive comprising a coalescent, the additive being present in an amount of about 2% by weight, based on the total weight of the premixed binder composition.</p>
	<p>A “coalescent” as an additive in an amount less than about 10% is an additive to the binder prepaint composition as set forth in column 3, lines 39-41. The terms “by weight” and “based on the total weight” with regard to the binder prepaint composition are supported by the consistency of use of weight percentages throughout the original disclosure of the ‘145 patent and by the disclosure in column 4, lines 1-12, which makes clear that the values for binder prepaint composition (High Resin in the table) are disclosed in “weight percentages”.</p>

Claims 35 and A40/41..	<p>Claim 310. (currently amended) A plurality of varied, but stable, premixed compositions, useful for formulating a paint product, which plurality comprises:</p>	<p>The term “plurality” is supported by the ‘145 patent, column 3, lines 56-67 and the table of column 4, lines 6-13. The claim 269 term “plurality of varied” corresponds in meaning to the Friel claim 38 term “set of different”. The term “plurality of varied” is supported by a disclosure in the ‘145 patent in column 3, lines 41-44 and column 4, lines 14-17 that indicates that each resin composition can be varied. Furthermore, the disclosure of the different constituent ingredients of each premixed composition set forth in column 2, line 15 through column 3, line 67 make it clear that each premixed composition is different or varies from the others. The term “premixed aqueous compositions” is disclosed in column 2, lines 14-15. While not relied upon in claim 307, the number of “three” prepaint compositions is supported by the original disclosure of the ‘145 patent in column 1, lines 49-54; the Abstract; column 3, lines 56-58 and 61-63; and column 4, lines 9 and 11. The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-18 and column 3, lines 49-51. Column 1, lines 64-67 and column 2, lines 65-67 specifically support the term “stable” as it is applied to the premixed pigment composition. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 6 of the Friel Patent. (See the explanation of how “stable” encompasses “mutually compatible” with respect to claims 1 and 89 above.)</p>
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<p>(a) the set of prepaints of claim 32 wherein the extender prepaint has a volume solids content of about 30% to about 70%, a PVC of about 35% to about 100%, and a Stormer viscosity of about 50 to about 250 KU; and</p>	<p>(a) the plurality of premixed aqueous compositions of claim 307; and</p>	<p>See the explanation regarding claims 32 and 307 above for the premixed compositions recited therein. With regard to the specific ranges of volume solids content and pigment volume concentration (PVC) of the extender prepaint in claim 35 of the Friel patent, the original disclosure of the '145 does not explicitly or inherently provide these ranges, and these ranges have been omitted from claim 310. However, depending on how much variation there is due to the term "about", the original disclosure may be considered to have or at least teach a volume solids content and a PVC within the recited ranges. As explained above, a Stormer viscosity of about 50 to about 250 KU is inherently met by the original disclosure of the '145 patent since it defines viscosities in a range from that of water and hardened concrete. This element is not explicitly detailed in the 145 patent and has been omitted from claim 310.</p>
<p>(b) a fluid pigment extender prepaint which consists essentially of:</p>	<p>(b) a premixed aqueous low resin composition which consists essentially of:</p>	<p>The low resin prepaint composition is supported by the original disclosure of column 3, lines 29-31.</p>

<p>(i) at least one mineral extender,</p> <p>(i) at least one of calcined clay, ground limestone, diatomaceous earth, and mixtures thereof,</p>	<p>Column 3, lines 30-32 disclose diatomaceous earth. Column 3, lines 33-35 discloses ground limestone and calcined clay. Friel discloses that the extender pigments include calcium carbonate (limestone), silica and others similar to the original disclosure of the '145 patent by the Applicant. While the term "silica", disclosed as an extender in the Friel '537 patent, is not explicitly disclosed as a constituent of the low resin prepaint composition of the '145 patent, column 3, lines 29-38 may be considered to support clay, ground limestone, and "silica" because "silica" is a primary constituent of diatomaceous earth. The term "silica" is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of "extender pigment")</p>
<p>(ii) at least one thickener,</p> <p>(ii) at least one thickener,</p>	<p>A "thickener" in the low resin prepaint composition is supported by the disclosure of column 3, lines 34-38.</p>
<p>(iii) water, and</p>	<p>Column 2, lines 6-8 and column 3, line29 and 30 make clear that the low resin composition includes water.</p>
<p>(iv) optionally a polymeric binder.</p> <p>(iv) optionally a resin.</p>	<p>Column 2, lines 6-8 and column 3, lines 29-30 of the '145 patent disclose resin in the low resin prepaint composition or a low resin content "binder" as disclosed in the Abstract.</p>

<p>Claims 36 and A42. The set of prepaints of claim 35, wherein the extender prepaint has a volume solids content of about 35% to about 65%, a PVC of about 40% to about 100% and a Stormer viscosity of about 60 to about 150 KU.</p>	<p>Claim 311. (Cancelled)</p>	<p>With regard to the specific ranges of volume solids content and pigment volume concentration (PVC) of the extender prepaint in claim 36 of the Friel patent, the original disclosure of the '145 does not explicitly or inherently provide these ranges. However, depending on how much variation there is due to the term “about”, the original disclosure may be considered to have or at least teach a volume solids content and a PVC within the recited ranges. However, to avoid a rejection based on lack of explicit antecedent basis these ranges have been omitted by the cancellation of claim 311. The element of “Stormer viscosity” is considered to be inherently met by the original disclosure of the '145 patent. However, since “Stormer viscosity” is not explicitly recited, it has also been omitted by cancellation of claim 311.</p>
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<p>Claims 37 and A43. The set of prepaints of claim 32, wherein the extender prepaint further consists essentially of at least one additive selected from the group consisting of an acid, a base, a defoamer, a coalescent, a cosolvent, a mildewcide, a biocide and an antifreeze agent with the additive being present in an amount of less than about 20% by weight, based on the total weight of prepaint.</p>	<p>Claim 312. (previously presented) The plurality of premixed compositions of claim 307, wherein the premixed binder composition further consists essentially of at least one additive comprising a coalescent, with the additive being present in an amount of less than about 20% by weight, based on the total weight of the binder composition.</p>	<p>A “coalescent” in an amount less than about 20% is an additive to the binder prepaint composition as set forth in column 3, lines 39-41. The terms “by weight” and “based on the total weight” with regard to the binder prepaint composition are supported by the consistency of use of weight percentages throughout the original disclosure of the ‘145 patent and by the disclosure in column 4, lines 1-12, which makes clear that the values for binder prepaint composition (High Resin in the table) are disclosed in “weight percentages”.</p>
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Claims 21 and A24. A.	<p>Claim 313. (currently amended) A premixed aqueous pigment composition useful for formulating a pigmented paint product containing other paint contents, the premixed pigment composition comprising:</p> <p>KU, useful for formulating a one pack, pigmented latex paint containing other paint ingredients, which prepaint consists essentially of:</p>	<p>The term “premixed aqueous compositions” is disclosed in column 2, lines 14-15. There are several premixed aqueous compositions including the “pigment composition”, as set forth in column 1, lines 49-53. The term “ingredients” is not explicitly recited in the ‘145 patent. However, an analogous term “contents” has been substituted for the term ingredients in the otherwise analogous claim 260 of the present application. The term “content” is supported in the original ‘145 disclosure at column 1, lines 49-51 in which “content” refers to a constituent ingredient for two of the prepaint compositions. Thus, “contents” are disclosed. Several other constituent ingredients are also described as making up the prepaint compositions, and thus these ingredients are also “contents”. With regard to the Friel claim 21 term “one pack”, Friel’s disclosure fails to define this term. As such, it appears to have little or no meaning in the claims and has been omitted in corresponding claim 313 of the present application. The term “latex” is not explicitly recited in the original disclosure of the ‘145 patent, and has been omitted from claim 313. However, the paint described in the ‘145 patent is inherently a “latex” paint. This is so because the premixed compositions are “fluid” based on the water component in each. (See column 2, lines 30-32; column 3, lines 10-12; column 3, lines 29-30; and column 3, lined 39-41.) As may be appreciated, resins used in aqueous paint compositions in general and the specific acrylic resin disclosed in column 3, lines 45-46 will inherently form a latex paint. The volume solids content (VS) and pigment volume concentration (PVC) of particular ranges are not</p>
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explicitly described in the originally description of the '145 patent. However, the VS and the PVC of the premixed pigment composition have been calculated to be within the range from about 30% to about 70%, and about 35% and about 100%, respectively. Column 3, lines 39-48 also makes clear that the premixed high resin composition or binder prepaint is an aqueous composition. Thus, the '145 patent disclosure inherently meets the Friel claim 21 recitation of ranges. It should be noted that these ranges are very broad so as hardly to be limitations. Although the relative quantities of the various ingredients are set forth in weight percentages in the '145 original disclosure, these values can be converted to VS and PVC, and shown to reside in the claimed ranges based on known densities and percentages of the materials in the premixed pigment composition disclosed in column 2, lines 24-38. The recited range of Stormer viscosity recited to be from 50 KU to 250KU is a broad range comparable to a range from the viscosity of water to that of hardened concrete. This range is considered to be met inherently by the original disclosure of the '145 patent since the materials in the pigment composition present in their suggested percentages will fall within this range of viscosity.

However, since Stormer viscosity is not explicitly described in the '145 patent, this term has been omitted from claim 313.

(i) at least one opacifying pigment,	a pigment,	The original disclosure of the '145 patent does not explicitly recite “opacifying.” However, the pigments of the original disclosure inherently opacify. Column 2, lines 24-27 and lines 30-33 disclose the exemplary pigment composition is a “pigment”-containing constituent that contains titanium dioxide. A “pigment” is a substance, such as titanium dioxide, that will block light when added to a paint. It inherently follows that the added substance, titanium dioxide, blocks light and thus provides the property to opacify. Column 1, lines 27-28 states that “The pigment composition is a composition with a high percentage of solids suspended in water.” Column 2, lines 46-47 disclose that the titanium dioxide “pigment” is maintained in a uniform dispersion. Solids in a dispersion or a suspension inherently opacify. Therefore, the disclosed pigments of ‘145 are opacifying pigments.
(ii) at least one dispersant,	a dispersant,	Column 2, lines 41-56 discloses a dispersant in the premixed pigment composition.
(iii) at least one thickener,	a thickener;	Column 2, lines 41-47 and 57-60 discloses a thickener in the premixed pigment composition.
(iv) at least one film-forming or non-film-forming polymer, and	a resin, and	A resin added to the premixed pigment composition is set forth in column 2, line 67 to column 3, line 3.

	<p>(v) water; wherein the dispersant(s), the thickener(s), and the polymer(s) are compatible with the pigment(s) and with the other paint ingredients and wherein the prepaint is stable to sedimentation.</p>	<p>water; wherein the pigment composition is free from settling and wherein mixing a portion of the pigment composition with the other paint contents provides the paint product.</p>	<p>Column 2, lines 31-33 discloses water in the fluid prepaint pigment composition. The term “stable” is supported by the original disclosure of the ‘145 patent in column 2, lines 14-17 and column 3, lines 49-51, as well as other description in column 1, lines 64-67. The term “stable” corresponds to “mutually compatible” recited in corresponding claim 21 of the Friel Patent. (See claims 1 and 89 for an explanation of how “stable” corresponds to “mutually compatible.”) The term “ingredients” is not explicitly recited in the ‘145 patent. However, an analogous term “contents” has been substituted for the term ingredients in the otherwise analogous claim 313 of the present application. The term “content” is supported in the original ‘145 disclosure at column 1, lines 49-51 in which “content” refers to a constituent ingredient for two of the prepaint compositions. Thus, “contents” are disclosed. Several other constituent ingredients are also described as making up the prepaint compositions, and thus these ingredients are also “contents”. The term “sedimentation” is not explicitly recited in the ‘145 patent. However, a term “free from settling” that has the same meaning as “stable to sedimentation” is disclosed in column 3, line 50.</p>
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Claims 22 and A25. The prepaint of claim 21, wherein the volume solids content is about 35% to about 50%, the PVC is about 50 to about 100%, and the Stormer viscosity is about 60 to about 150 KU.	<p>Claim 314. (Cancelled)</p> <p>The broad range from about 35% to about 50% of volume solids recited in Friel claim 22 is inherent in the original disclosure of the '145 patent. The volume solids content of the premixed pigment composition has been calculated from the percentages and materials disclosed in the '145 patent to be in the range from about 35% to about 50%. Likewise, the PVC is, when calculated, is in the range of about 50 to about 100% and is inherently provided by the '145 patent. The Stormer viscosity of the fluid prepaint pigment composition also falls in the range from about 60 to about 150 KU and this limitation is also therefore inherently met. However, these ranges are not explicitly described in the '145 patent. Therefore, these ranges have been omitted by the cancellation of claim 314.</p>
Claims 23 and A26. The prepaint of claim 21, wherein the polymer is adsorbed onto the opacifying pigment.	<p>Claim 315. (previously presented) The premixed aqueous composition of claim 313, wherein the resin is adsorbed onto the pigment.</p>

Claims 29 and A32/33.	<p>Claim 319. (previously presented) The premixed aqueous composition of claim 313, wherein the resin comprises an acrylic, polyvinyl acetate, styrene-acrylic, styrene-butadiene, vinyl acetate-acrylic, ethylene-vinyl acetate, vinyl acetate-vinyl versatate, vinyl acetate-vinyl maleate, vinyl acetate-vinyl chloride-acrylic, ethylene-vinyl acetate-acrylic polymers and mixtures thereof and wherein the polymer further comprises up to about 10% by weight of the polymer of a monomer selected from the group consisting of a functional monomer, a co-monomer, and combinations thereof.</p>	<p>The original disclosure explicitly supports the acrylic resin by the disclosure of a specific resin known as “6183 made by BASF”, which is an acrylic resin. Claim 244 includes only a partial list of the resins of Friel claim 29. This is because claim 29 of Friel recites a laundry list including several specific resins that are not expressly disclosed in the original disclosure of the ‘145 patent. The remaining specific resins recited in claim 29 of the Friel patent are well known equivalents or substitutes for the “acrylic resin” disclosed by “6183 made by BASF” in the ‘145 patent. As may be appreciated, resins used in aqueous paint compositions in general, and the specific acrylic resin disclosed in column 3, lines 45-46, will be polymers and will inherently form a latex polymeric paint. The specific range of weight percent and details directed to the polymer being of a monomer or co-monomer is not explicitly recited, but is considered to recite alternatives that are within the ordinary skill in the art. However, these details have been omitted from claim 244 to avoid a rejection based on lack of antecedent basis.</p>
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Friel '537 PATENT CLAIMS and Friel '405 APPLICATION CLAIMS (application claims indicated by the letter "A" preceding the claim number.)	CORRESPONDING CLAIM/COUNT IN CURRENT APPLICATION (A Pigment Extender Composition)	BASIS FOR CONSTRUCTIVE REDUCTION TO PRACTICE AND WRITTEN DESCRIPTION IN APPLICANT'S ORIGINAL SPECIFICATION OF U.S. PATENT 6,221,145 (hereinafter '145 patent)
Claims 31 and A35/36. A fluid pigment extender prepaint, useful for formulating a one pack, pigmented latex paint containing other paint ingredients, which prepaint consists essentially of	Claim 327. (currently amended) A premixed aqueous low resin composition, useful for producing a paint product containing other contents, the premixed low resin composition comprising:	<p>The term "premixed aqueous compositions" is disclosed in column 2, lines 14-15. There are several premixed aqueous compositions including the "low resin composition", as set forth in column 3, lines 29-38. The term "low resin" is supported by column 3, line 29-30. The low resin prepaint composition of the '145 patent has similar contents to those of the extender prepaint of Friel claim 31. The term "paint product" and that it is a "pigmented" paint product is supported by the disclosure that combining the premixed compositions having their constituent ingredients in the correct proportions will "enable the aqueous pigment dispersion to be used ... to generate the wide scope of paint products", as set forth in the original disclosure of the '145 patent at column 2, lines 61-65. The term "ingredients" is not explicitly recited in the '145 patent. However, an analogous term "contents" has been substituted for the term ingredients in the otherwise analogous claim 327 of the present application. The term "content" is supported in the original '145 disclosure at column 1, lines 49-51 in which "content" refers to a constituent ingredient for two of the prepaint compositions. Thus, "contents" are disclosed. Several other constituent ingredients are also described as making up the prepaint compositions, and thus these ingredients are also "contents".</p>

	<p>(i) at least one mineral extender having a volume solids content of about 30% to about 70%, a PVC of about 35% to about 100%, and a Stormer viscosity of about 50 to about 250 KU;</p>	<p>(i) one or more of calcined clay, ground limestone, diatomaceous earth, and combinations thereof;</p> <p>Column 3, lines 30-32 disclose diatomaceous earth. Column 3, lines 33-35 discloses ground limestone and calcined clay, and combinations thereof. Friel discloses that the extender pigments includes calcium carbonate (limestone), silicates (which are clays), silica and others similar to those of the '145 patent original disclosure. Column 3, lines 29-38 support clay, ground limestone, and silica. Silica is a primary constituent of diatomaceous earth, which term "silica" is also explicitly recited in column 2, line 34. (These substances or species: at least one of calcined clay, silica, diatomaceous earth, ground limestone, and mixtures thereof are considered to encompass the majority of extender pigments used in the architectural paint industry. Thus, the species in this case will anticipate the genus of "extender pigment".) With regard to the specific ranges of volume solids content and pigment volume concentration (PVC) of the extender prepaint in claim 31 of the Friel patent, the original disclosure of the '145 does not explicitly or inherently provide these ranges. However, depending on how much variation there is due to the term "about", the original disclosure may be considered to have, (or at least teach), a volume solids content and a PVC within the recited ranges. However, to avoid a rejection based on lack of explicit antecedent basis these ranges have been omitted from claim 260. As explained above, a Stormer viscosity of about 50 to about 250 KU is also inherently met by the original disclosure of the '145 patent since it defines viscosities in a range from that of water and hardened concrete.</p>
	<p>(ii) at least one thickener,</p> <p>(ii) a thickener,</p>	<p>A "thickener" in the premixed low resin composition is supported by the disclosure of column 3, lines 34-38.</p>

(iii) water, and	(iii) water, and	Column 2, lines 6-8 and column 3, line 29 and 30 make clear that the low resin composition includes water.
(iv) an optional polymeric binder; wherein the prepaint ingredients are compatible with each other and with the ingredients of the paint.	(iv) optionally a resin; wherein the premixed low resin composition contents are stable when mixed with each other.	Column 2, lines 6-8 and column 3, lines 29-30 of the '145 patent disclose resin in the premixed "low resin" composition, or the low resin content "binder" as disclosed in the Abstract. The term "stable" is supported by the original disclosure of the '145 patent in column 2, lines 14-18 and column 3, lines 49-51. The term "stable" corresponds to "mutually compatible" recited in corresponding claim 31 of the Friel Patent. (See claims 1 and 89 for an explanation of how "stable" corresponds to "mutually compatible".)

acid rain rain with pH values < about 5; commonly results from ACIDS formed by POLLUTANTS.^{171,172} (IUPAC)

"Pure" rain water equilibrated with atmospheric CO₂ and naturally occurring acids in relatively clean air usually has a pH > 5.

acid refined linseed oil LINSEED OIL which has been treated with ACID, usually sulfuric, to remove MUCILAGINOUS matter.^{63,156}

acid resistance ability of materials to resist attack by ACIDS; generally, the acids concerned are MINERAL ACIDS.⁷²

acid sludge residue which separates from mineral and related OILS when they are refined with sulfuric acid.¹⁴⁴

acid value see ACID NUMBER (VALUE).¹⁵⁷

acidity {1} measure of the free acid present; {2} in OILS, acidity denotes the presence of acid-type constituents whose concentrations are usually defined in terms of the NEUTRALIZATION NUMBER, called ACID NUMBER.^{144,157}

acoustic coating coating which absorbs or deadens sound.^{71,163} See ANTINOISE PAINTS.^{71,163}

acoustical board a low-density, sound-absorbing structural INSULATING board having a factory-applied finish and a fissured, felted-fiber, slotted or perforated surface pattern provided to reduce sound reflection.^{75,159,82} (ASTM)

These are usually supplied for use in the form of tiles.

acoustical ceiling board an ACOUSTICAL MATERIAL in board form, designed primarily for suspended ceiling application.^{75,82} (DACP)

acoustical material any material considered in terms of its acoustical properties.^{75,159} (ASTM)

Commonly, and especially, a material designed to absorb sound.

acoustical paint see ANTINOISE PAINTS and ACOUSTIC COATING.^{71,163}

acoustical plaster a special low-density, sound absorptive plaster, applied in the form of a finish-coat, to provide a continuous finished surface.^{73,82,75} (DACP)

acoustical tile an ACOUSTICAL MATERIAL in board form, usually having unit dimensions of 24 in. x 24 in. (approx. 61 cm x 61 cm) or less.^{82,75} (DACP)

Usually used on ceilings but also may be applied to sidewalls.

acrolein CH₂=CHCHO. UNSATURATED LIQUID ALDEHYDE with a bp of 52°C.^{141,144}

It possesses a very pungent odor, and has strong lacrymatory properties.

acrolein polymers and resins HOMOPOLYMERS or COPOLYMERS OF ACROLEIN.¹³⁰

acrylate ester formed from ACRYLIC ACID.⁷¹

The term also applies to the metallic salts of this acid.

acrylate resins see ACRYLICS.^{38,71,130}

acrylic acid CH₂=CHCOOH. Propenoic acid, vinylformic acid. A MONOMER used in the manufacture of coatings and plastics.¹⁴¹

Properties: mol wt, 72.06; mp, 14°C; bp, 141.0°C; sp gr, 1.422.

acrylic ester ESTER of ACRYLIC ACID, or of a structural derivative of acrylic acid, such as METHACRYLIC ACID.¹⁴⁴

acrylic latex AQUEOUS DISPERSION, THERMOPLASTIC OR THERMOSETTING, of POLYMERS or COPOLYMERS of ACRYLIC ACID, methacrylic acid, esters of these acids, or ACRYLONITRILE.^{130,156}

acrylic plastics THERMOPLASTIC OR THERMOSETTING PLASTICS of POLYMERS or COPOLYMERS of ACRYLIC ACID, methacrylic acid, esters of these acids, or acrylonitrile.^{38,130}

acrylics RESINS resulting from the POLYMERIZATION of derivatives of ACRYLIC ACIDS, including esters of acrylic acid, methacrylic acid, acrylonitrile, and their copolymers.^{38,71,130} Syn: acrylic resins, and acrylate resins

acrylide maroon this group includes the AZO PIGMENTS based on acrylides of beta hydroxyl naphthoic acid (e.g., toluidine maroon); they are characterized by their excellent SOAP, ACID, and alkali resistance and good bake resistance.⁴¹ See ALKALI-RESISTANT RED.⁴¹

Poor BLEED RESISTANCE in aromatic and ALCOHOL SOLVENTS, poor LIGHTFASTNESS in other than MASSTONE shades (including metalics), low HIDING POWER, and high cost discourage their use except where chemical resistance requirements demand; to this extent, they may be considered as specialty pigments.

acrylonitrile CH₂=CHCN. A raw material for the manufacture of synthetic RESINS and RUBBERS.^{141,144} Syn: vinyl cyanide

It is a liquid at room temperature, with a bp of 77°C and an fp of 0°C.

acrylonitrile-butadiene-styrene (ABS) ACRYLONITRILE and STYRENE liquids and BUTADIENE gas polymerized together in a variety of ratios to produce the family of ABS resins.^{38,130}

ACS abbreviation for AMERICAN CHEMICAL SOCIETY.¹⁷⁴

exposure limits the concentration in workplace air of a chemical thought acceptable.¹⁷² See MAXIMUM ALLOWABLE CONCENTRATION.¹⁷²

This means that most workers can be exposed at the given levels or lower without harmful effects. The exposure limits in common use are (1) TLV-TWA (threshold limit value - time-weighted average); (2) STEL (short-term exposure limit) or STEV (short-term exposure value); (3) C (ceiling value).

exposure rack a frame on which test panels are exposed for DURABILITY TESTS.^{154,157} See TEST FENCE.^{154,157}

exposure tests tests which are conducted to evaluate the DURABILITY of a coating or film.¹⁵⁷

They include exposure to ultraviolet light, moisture, cold, heat, salt water, mildew, etc. They can be generated either naturally or artificially.

ASTM test methods for exposure tests include: house paints on new wood, D1006; paints on steel surfaces, D1014, D5065; quantifying dirt collection, D3719; recording results on standard forms, D1150; wood panel substrates, D358.

expression removal of a liquid from a solid by pressing, as in the manufacture of VEGETABLE OILS from meal cakes.^{63,131}

extender (1) see EXTENDER (PIGMENT).^{58,41} (2) A TRANSPARENT OR SEMITRANSPARENT white PIGMENT or a VARNISH that is used to alter the COLOR STRENGTH and working properties of an INK, without affecting its HUE. However, in FLAT paints, when used properly they can impart DRY HIDING and help spacing of TITANIUM DIOXIDE. Also, air voids in CALCINED CLAYS help hiding.¹⁶⁸

The word EXTENDER has a pejorative connotation, however, it is true that they can be used to cheapen coatings. Their use is, however, invaluable in imparting desirable specific properties: aid SANDING, control SHEEN levels, improve ABRASION and BURNISHING resistance, affect RHEOLOGY, reinforce the film and increase BUILD and filling, and, as described above, contribute to hiding of flat paints.

Extenders can be conveniently divided into four groups: SULFATES—barytes and blanc fixe (both barium sulfates), GYPSUM (calcium sulfate); CARBONATES—whiting (calcium carbonate); SILICATES—CLAY (aluminum silicate), wollastonite (calcium silicate), TALC (magnesium silicate), MICA (aluminum potassium silicate); and OXIDES—silica, alumina.

extender (pigment) a specific group of ACHROMATIC pigments of low REFRACTIVE INDEX (between 1.45 and 1.70) incorporated into a vehicle system whose refractive index is in a range of 1.5 to 1.6.^{58,41}

exterior basecoat a coating applied to the outside of a beverage can to provide both corrosion resistance and as a background for LITHOGRAPHY OR PRINTING.^{163,71} [EPA]

exterior finishes coatings which are expected to possess reasonable DURABILITY when exposed to natural WEATHERING.⁷¹ See EXTERIOR PAINTS and VARNISHES.^{71,152}

exterior paints and varnishes material formulated for use in conditions exposed to the weather.^{71,152}

exterior type plywood PLYWOOD BONDED with a fully water-resistant glue.^{153,159,75}

external mix SPRAY EQUIPMENT in which fluid and air join outside of aircap.⁵⁹

external phase of an emulsion synonym for the continuous phase.⁶⁰

external plasticizer postadded PLASTICIZER as opposed to PLASTICIZATION by means of internally combined groups, such as COPOLYMERIZATION.¹⁷⁰ cf. INTERNAL PLASTICIZERS¹⁷⁰

extinction coefficient an older synonym for ABSORPTION COEFFICIENT.^{69,43}

extraction method by which the soluble parts of a substance are separated from the substance by a liquid.^{157,131}

extrusion method whereby heated or unheated material forced through a shaping orifice becomes one continuously formed piece.^{57,151} See COMPACTING and STRAINER.^{38,131}

extrusion mark in EXTRUDED items, a cleft, gash, slit, or notch.³⁸

extrusion moldings MOLDINGS which are made from plastic material by forcing it through a shaped orifice by means of pressure.^{38,57}

exudation the MIGRATION of a substance to the SURFACE, such as RESIN from WOOD, PLASTICIZER from films.^{42,56,154} cf. BLEEDING and SWEATING^{69,42}

It is used as a SOLVENT, mostly in the laboratory. The term "ligroine" should be used in place of "benzine" or "petroleum ether."

lime CALCIUM OXIDE [CaO], or a mixture of calcium oxide and magnesium oxide [MgO]; also, loosely, a general term for the various chemical and physical forms of QUICKLIME, HYDRATED LIME, and HYDRAULIC HYDRATED LIME.¹⁴⁴ (ASTM) cf. LIMESTONE^{41,58} See CALCIUM OXIDE.¹⁴⁴

lime blue mixture of ULTRAMARINE and TERRA ALBA.⁴¹
Another type of lime blue is made from METHYLENE BLUE by ADSORPTION on natural earth.

lime green see GREEN, LIME.^{41,68}

lime putty see PUTTY.^{158,165}

lime red LAKE produced by adsorbing magenta on a natural earth.⁴¹

lime yellow LAKE produced by adsorbing auramine or other yellow DYESTUFF on a natural earth.⁴¹

limed rosin commercial CALCIUM RESINATE made by the direct interaction of LIME and ROSIN.^{156,167}

limekiln a furnace used to reduce naturally occurring forms of CALCIUM CARBONATE to LIME.⁵⁹

limestone see CALCIUM CARBONATE, NATURAL.^{41,58}

limewashing coating with limewash made from HYDRATED LIME or by slaking QUICKLIME, to which tallow is sometimes added.^{71,163} (BSI) Syn: whitewash, whitening

limiting viscosity number see INTRINSIC VISCOSITY.^{130,166}

limonite see IRON OXIDES, NATURAL.⁴¹

line etching a PRINT made up of lines or PIGMENTED areas and lighter spaces free from SHADING.¹⁶⁸

liner see LINING TOOL.⁵⁹

lining fabrics muslin or CANVAS used underneath fine WALLPAPERS to avoid small cracks possibly opening up in a PLASTER wall and showing through.¹⁴⁸

lining paper plain PAPER applied before the WALLPAPER.¹⁴⁸

Assures a smoother surface and better ADHESION.

lining tool (Brit.) A small flat FITCH with a slanting edge, used for painting lines with the help of a rule.⁵⁹ Syn: liner

linkrusta a permanent WALLCOVERING coated with a WOOD FLOUR and LINSEED OIL mixture on a PAPER backing.¹⁴⁸

Linkrusta patterns are molded rather than printed.

linoleic acid C₁₈H₃₂O₂, cis-9, cis-12 octadecadienoic acid.⁶³

A FATTY ACID constituent of LINSEED and other DRYING OILS, where it occurs as a glyceride; mol wt of 280.44, bp of 230°C, iodine value of 181.1.

linolein glyceride of LINOLEIC ACID. It is one of the constituents of LINSEED OIL which induces the DRYING properties.⁶³

linolenate driers certain METAL SALTS of, and SOAPS of, LINSEED FATTY ACIDS.^{67,83}

linolenic acid CH₃CH₂CH=CHCH₂CH=CHCH₂CH=CH[CH₂]₇CO-OH. Triply unsaturated fatty acid component of LINSEED and other DRYING OILS.⁶³

Properties: bp of 230°C/17 mm Hg, an acid value of 201.6, and an iodine value of 273.7.

linoleum and oilcloth varnishes special highly flexible and elastic VARNISHES.^{152,156}

linoleum, floor and wall covering made from oxidized LINSEED OIL or combinations of DRYING OILS, wood flour and/or ground cork, resins, and pigment, rolled out and compressed onto an ASPHALT saturated felt, burlap, or other backing.⁷⁵

Heat, which fuses and sets the oils and resins to form strong binding agents, is applied to the mixture during compression.

linoxyd semisolid, highly oxidized LINSEED OIL; used in the manufacture of LINOLEUM.⁶³

linseed oil DRYING OIL from seeds of the flax plant (*Linum usitatissimum*).⁶³ (PTM)

The oil is refined by treatments which remove water and MUCILAGINOUS material and is then described as refined oil, according to the method of treatment. Further processing produces BOILED OIL, BLOWN OIL, or BODIED OIL. This best known and most widely used oil in the paint industry is characterized by its relatively short DRYING TIME. Its high degree of UNSATURATION, to which its good drying characteristics can be partially ascribed, is due to the presence of large percentages of linolenic and linoleic triglycerides. Many years ago the oil was obtained from seed by mechanical pressure, including both hydraulic presses and later expellers. In recent years the more modern SOLVENT EXTRACTION is used. Oils thus obtained show lower percentages of impurities and better overall quality. Linseed oil responds very readily to a variety of refining techniques and is used in the paint industry both as a drying oil and as an ingredient in a wide array of modified RESINS of many varieties.

ASTM specification for boiled linseed oil is D260; for raw linseed oil, D234.

phthalic anhydride $C_6H_4(CO)_2O$. White, odorless, crystalline FLAKE ACID ANHYDRIDE used in the manufacture of ALKYDS, POLYESTER RESINS, PLASTICIZERS, SOLVENTS, DYES, and INTERMEDIATES.¹⁵⁶

Properties: bp, 284°C; mp, 130°C; sp gr. 1.53; acid value, 758.0.

ASTM test methods for phthalic anhydride include: color in molten state, D3366; content in alkyd resins, D563, D1306; sampling and handling, D3438; specification, D2403.

phthalic anhydride test phthalic anhydride reacts with primary ALCOHOLS when the mixture is refluxed in BENZENE.¹⁵⁷

Secondary alcohols react less readily, usually requiring a reaction temperature of 100-200°C, whereas the tertiary alcohols do not react.

phthalocyanine pigments series of ORGANIC PIGMENTS having as a structural unit four isoindole groups, $[C_6H_4]_2C_2N$, linked by four nitrogen atoms so as to form a conjugated chain.¹⁵⁸

There are four commercially important modifications, including the basic compound: (1) phthalocyanine (METAL free), $(C_6H_4C_2N)_4N_2$, blue-green; (2) copper phthalocyanine, in which a copper atom is held by secondary valences of the isoindole nitrogen atoms; sp gr, 1.59; (3) chlorinated copper phthalocyanine, green, in which 15 to 16 hydrogen atoms are replaced by chlorine; (4) sulfonated copper phthalocyanine, water-soluble, green, in which two hydrogen atoms are replaced by sulfonic acid, HSO_4^- groups.

ASTM Test Methods D1135 and D3256 cover the analysis of phthalocyanine (phthalo) blue and ASTM D963, its specification.

ASTM Test Method D3256 covers the chemical analysis of phthalocyanine (phthalo) green and ASTM D3021, its specification.

phyccocolloid any of several polysaccharide hydrocolloids from brown to red seaweeds.^{159,155} See GUM, NATURAL.^{155,130,167}

physical of, or relating to matter and energy or the sciences dealing with them, especially physics.¹⁴²

physical hazard a substance for which there is valid evidence that it is a combustible liquid, compressed gas, explosive, flammable, an ORGANIC peroxide, an OXIDIZER, PYROPHORIC, unstable (reactive), or water reactive.¹⁷²

PIC test abbreviation for pseudoisochromatic test for defective COLOR vision.^{43,157,69} See PSEUDOISOCHROMATIC PLATE TEST.^{43,157,69}

pick see PICKING.¹⁶⁸

pick-up roll (1) in the coil COATING industry, the roll which revolves within the pan and is partially immersed in the paint. This roll picks up paint from the pan and applies it to the transfer or applicator roll;^{59,70,79,77} (2) spreading device where the

roll for picking up the ADHESIVE runs in a reservoir of adhesive. (ASTM)

picking (1) the adherence of a sheet of PAPER to the plate due to the tack of the INK; (2) the removal of the surface of the paper during printing. It occurs when the pulling FORCE (tack) of the ink is greater than the surface strength of the paper, whether coated or uncoated.¹⁶⁸ See LIFTING.^{42,56,77}

picking up (1) the blending of a coat of freshly applied paint with another over which it is applied;⁵⁴ (2) the joining up of a WET EDGE.⁵⁴ cf. PULLING UP⁴²

pickled pine a gray FINISH which duplicates the effect formerly produced by actually pickling the wood with nitric acid, but now obtained by using a gray STAIN.¹⁴⁸

pickling (1) treatment for the removal of rust and MILL SCALE from STEEL by immersion in an acid solution containing an INHIBITOR. Pickling should be followed by thorough washing and drying before painting; (2) the process of removing paint and VARNISH with an alkaline preparation or strong solvents.¹⁵⁸ (BSI)

picture framing a perimeter thickness of COLOR difference (usually darker) relative to the rest of the painted surface.^{42,56}

This problem can be due to various mechanisms: (a) architectural paints: the greater shear of a BRUSH used around the perimeter of a wall or ceiling compared to the lower shear of a roller used on the rest of the wall or ceiling; (b) industrial finishes: the flow of a FINISH during baking resulting in the build-up of the coating on the edge of the SUBSTRATE; (c) roofing: a rectangular pattern of ridges in a membrane over insulation or deck joints. (ASTM); CEMENT-ASBESTOS shingles: (on EXPOSURE fences) the darker color of the coating on the perimeter due to carbonation (from the CO_2 in the air) of the LIME in the shingle causing it to be more neutral compared to the rest of the shingle which is more alkaline and attacks some paints usually causing a lighter COLOR.

pig wrack see CARRAGEEN.^{159,155}

pigging the cleaning out of pipelines, between processes, with a special contoured plug or pig.^{49,131}

The pig is driven down the pipeline by compressed gas fluid or even product to produce a clean line ready for reuse.

pigment finely ground, natural or synthetic, INORGANIC or ORGANIC, insoluble DISPERSED PARTICLES (POWDER) which, when dispersed in a liquid VEHICLE to make paint, may provide, in addition to COLOR,

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many of the essential properties of a paint—OPACITY, HARDNESS, DURABILITY, and CORROSION RESISTANCE.^{41,69}

The term is used to include EXTENDERS, as well as white or color pigments. The distinction between powders which are pigments and those which are dyes is generally considered on the basis of SOLUBILITY—pigments being insoluble and dispersed in the material, dyes being soluble or in solution as used.

ASTM test methods for pigment content of paints and dispersions include: paint/traffic marking material, D4451; pigment pastes in oil, test, D1208; solvent paints, D2371; titanium dioxide slurries, D3926; water-based paints, D3723.

ASTM test methods for general properties and composition of pigments include: bleeding characteristics, D279; acidity/alkalinity, D1208; moisture content, D280 and D1208; volatile content, D4139; water soluble salts content, D2448; lightfastness in artist paints, D4303; oil absorption, Gardner-Coleman method, D281.

ASTM test methods covering pigment particle size include: reporting of characteristics, D1366; coarse particle content, D185; fineness of dispersion paint, D1210; fineness of grind, printing INK, D1316; particle size distribution, D3360; specific gravity (density), D153; tinting strength and color of colored pigments—with a mechanical muller, D387; with a miniature sand mill, D3022; tinting strength of white pigments—visual method, D332; instrumental method, D2745.

Pigment Black 6 (77266) see LAMBLACK.⁴¹

Pigment Black 7 (77266) see CARBON BLACK.⁴¹

Pigment Black 10 see GRAPHITE.⁴¹

Pigment Black 11 (77499) see BLACK IRON OXIDE.⁴¹

pigment bleeding diffusing of coloring matter from a previously coated surface due to SOLVENT extraction of colorants.^{41,42,56,69}

Pigment Blue 27 (77510) see IRON BLUE.⁴¹

Pigment Blue 28 (77346) see COBALT BLUE.⁴¹

Pigment Blue 29 (77007) see ULTRAMARINE BLUE.⁴¹

Pigment Brown 6 (77499) see BROWN IRON OXIDE PIGMENT.⁴¹

pigment dyes see DYE PIGMENTS.⁴¹

pigment extender see EXTENDER (PIGMENT).⁴¹

Pigment Green 8 (10006) see PIGMENT GREEN B.⁴¹

Pigment Green 10 (12775) see NICKEL AZO YELLOW.⁴¹

Pigment Green 15 (77510/77603) see CHROME GREENS.⁴¹

Pigment Green 17 (77288) see CHROMIUM OXIDE GREEN.⁴¹

Pigment Green 18 (77289) see HYDRATED CHROMIUM OXIDE.⁴¹

Pigment Green B $C_{30}H_{18}N_3O_6FeNa$. Pigment Green 8 (10006). A stable chelate PIGMENT based on nitrosation of 2-naphthol.⁴¹

Good ALKALI RESISTANCE and interior LIGHTFASTNESS; POOR ACID RESISTANCE. Density, 1.4-1.58 g/cm³ (11.6-13.1 lb/gal); O.A., 75-100; particle size, 0.01-0.35 μ m.

pigment grind (deprecated) Not a grind, but a DISPERSION OF PIGMENT in VEHICLE.⁶⁴

Preferred term is "mill base."

pigment, metallic see METALLIC PIGMENT.⁴¹

pigment, nonhiding see EXTENDER (PIGMENT).^{41,56}

Pigment Orange 21 (77601) see CHROME ORANGE, LIGHT and DEEP.⁴¹

Pigment Orange 23 (77201) see CADMIUM-MERCURY SULFIDES.⁴¹

pigment paste see PASTE, PIGMENT.⁴¹

Pigment Red 1 (12070) see PARA REDS.⁴¹

Pigment Red 3 (12120) see TOLUIDINE REDS.⁴¹

Pigment Red 4 (12085) see ORTHO-CHLOR-PARA-NITRANILINE.⁴¹

Pigment Red 6 (12090) see PARA-CHLOR-ORTHO-NITRANILINE.⁴¹

Pigment Red 38 (21120) see PYRAZOLONE RED.⁴¹

Pigment Red 48 (15865) see BON REDS AND MAROONS; PERMANENT RED 2B.⁴¹

Pigment Red 49 (15630) see LITHOL RED.⁴¹

Pigment Red 53 (15585) see LAKE RED C.⁴¹

Pigment Red 57 (15850) see LITHOL RUBINE.⁴¹

Pigment Red 81 (45160) see RHODAMINE 6G.⁴¹

Pigment Red 83 (58000) see ALIZARIN RED.⁴¹

Pigment Red 101 (77491) see INDIAN RED; IRON OXIDES, SYNTHETIC.⁴¹

Pigment Red 104 (77605) see MOLYBDATE ORANGE.⁴¹

Pigment Red 105 (77578) see RED LEAD.⁴¹

precipitation scavenging see SCAVENGING.^{171,172}

precision (reproducibility) the closeness of agreement between the results obtained by applying a given experimental procedure several times under prescribed conditions. The smaller the random part of the experimental errors which affects the results, the more precise is the method.^{157,145,36} [IUPAC]

This term is not to be confused with accuracy which is a measure of the agreement between the true value and the measured value.

precure usually used for a definite controlled state of partial CURE to set up the article for intermediate handling before the final cure.⁶⁷

Seldom used to refer to a defect.

precursor a chemical COMPOUND which is released into the atmosphere, undergoes chemical change, and leads to a new (secondary) pollutant, is called a precursor of that species.^{171,172} [IUPAC]

prefabrication primer quick-drying material applied as a thin film to a METAL surface after cleaning, e.g., by a BLAST CLEANING PROCESS, to give protection during the period before and during FABRICATION.^{71,158} [BSI] Syn: shop primer

Prefabrication primers should not interfere seriously with conventional welding operations or give off toxic fumes during such operations.

prehistoric art painting and sculpture produced by artists of the Old, Middle, and New Stone ages.⁸¹ See CAVE PAINTING.⁸¹

The earliest known piece of prehistoric sculpture is the famous "Venus of Willendorf" (Natural History Museum, Vienna), a small fertility image of Paleolithic origin dating around 11,000 B.C.

premature vulcanization uncontrolled CURING or setting up of material before final CURE.^{67,176} See BIN CURE.⁶⁷

premix an admixture of several ingredients designed to be incorporated in a formulation or PROCESS as a group as opposed to individually.^{49,131}

prepared linseed oil in the PRINTING INK industry, LINSEED OIL which has been treated with LITHARGE and other chemicals.^{63,168}

prepasted ADHESIVE applied to the back of WALLCOVERING by the manufacturer.

DIPPING in water before hanging activates the paste.

prepolymer a POLYMER of degree of POLYMERIZATION intermediate between that of the MONOMER or MONOMERS and the final POLYMER.¹³⁰

preservative a biocidal ADDITIVE used to prevent growth of MICROORGANISMS in LATEX and other

waterborne paints that cause spoilage, foul-smelling metabolic products, gassing in the can, and paint viscosity reduction due to ENZYME digestion of cellulolic thickeners.^{83,173} See WOOD PRESERVATIVE COATINGS⁷¹ and IN-CAN PRESERVATIVES.⁸³

press cake a PIGMENT dispersed in water (obtained directly from a FILTER PRESS) in which a water-insoluble RESIN is emulsified.^{41,164}

A SOLVENT-based dispersion is made by breaking this emulsion and removing the water.

pressure FORCE applied over a surface, measured as force per unit area.¹⁴²

pressure marking GLOSSY OR DULL spots which become apparent as a STRIP is uncoiled.^{56,70}

This is usually due to an undercured or soft film. Also can be caused by improper PLASTICIZER balance.

pressure mottling the film distortion or uneven pattern that causes a change of GLOSS and a non-uniform APPEARANCE in the coated surface, as opposed to BLOCKING.⁵⁶ See PRESSURE MARKING.⁵⁶

pressure-sensitive adhesive see ADHESIVE, PRESSURE-SENSITIVE.⁷⁹

When placed on a backing material, it adheres to another surface on contact without WETTING, heating, or adding a CURING AGENT.

pretreatment usually restricted to mean the chemical treatment of unpainted METAL surfaces before painting.¹⁵⁸ [BSI]

pretreatment primer see WASH PRIMER.^{71,158,66}

pretrimmed papers rolls of WALLPAPER from which SELVAGE has been trimmed at factory.¹⁴⁸ Syn: trimmed papers

primary amine value the number of milligrams of potassium hydroxide equivalent to the primary AMINE basicity in 1 g of sample.^{134,157,128} [ASTM]

primary colors three basic colors used to make most other colors by mixture, either ADDITIVE MIXTURE of lights or SUBTRACTIVE MIXTURE of colorants.^{43,69} See PRIMARY COLORS, ADDITIVE; PRIMARY COLORS, CIE; and PRIMARY COLORS, SUBTRACTIVE.^{69,43}

primary colors, additive three colored lights from which all other colors can be matched by ADDITIVE MIXTURE.^{69,43}

The three must be selected so that no one of them can be MATCHED by mixture of the other two. Generally, a red, a green, and a blue are used.

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containing a suspension of titanium hydroxide, with sodium carbonate.⁴¹

The mixed precipitate is washed and calcined.

titanium dioxide, anatase TiO_2 . Pigment White 6 (77891). A high-opacity, bright PIGMENT of the chalking type, used as a prime pigment in paints, RUBBER, PLASTICS.⁴¹ cf. TITANIUM DIOXIDE, RUTILE.⁴¹ Syn: titania

Prepared from the mineral, ilmenite, or rutile ore. Density, 3.8-4.1 g/cm³ (32-34 lb/gal); O.A., 18-30; particle size, 0.3 μm ; refractive index, 2.55.

titanium dioxide, rutile TiO_2 . Pigment White 6 (77891). A high-opacity, bright white PIGMENT, nonchalking type; used as a prime pigment in paints, RUBBER, plastics.⁴¹ cf. TITANIUM OXIDE, ANATASE⁴¹ Syn: titania

Prepared from the mineral, ilmenite, or rutile ore. Properties: density, 3.9-4.2 g/cm³ (33-35 lb/gal); O.A., 16-48; particle size, 0.2-0.3 μm ; refractive index, 2.76. Titanium dioxide in its rutile crystalline form has an exceptionally high REFRACTIVE INDEX and its OPACITY and TINTING STRENGTH, when finely dispersed, exceed all other white pigments. It is the most widely used white pigment in the paint and coatings industry.

In addition to giving opacity and whiteness to coatings, titanium dioxide absorbs or reflects harmful RADIATION, thereby protecting the SUBSTRATE. In its pure form it can also act as a photoactive CATALYST causing DEGRADATION of the BINDERS, such as ALKYDS, and eventual loss of pigment from the surface—one of the mechanisms of CHALKING. To prevent or reduce this, titanium oxide PARTICLES are coated with, for example, ALUMINA and SILICA. The coating of titanium dioxide is a highly developed process and has resulted in numerous grades intended for specific uses.

titanium greens complex PIGMENTS based on CALCINED mixtures of TITANIUM OXIDE or hydroxide with suitable other metallic oxides, carbonates, etc.⁴¹

The other METALLIC COMPOUNDS include those of zinc.

titanium lithopone this was made by mixing a minor proportion of TITANIUM DIOXIDE into LITHOPONE, or possibly by the COPRECIPITATION of the usual lithopone constituents in the presence of titanium hydroxide.⁴¹ Syn: titanated lithopone

The resultant product in the latter case is subjected to controlled CALCINATION.

titanium yellow see NICKEL TITANATE.⁴¹

TLV see THRESHOLD LIMIT VALUE.¹⁷²

TLV-TWA the allowable time-weighted average concentration for a normal eight-hour workday or 40-hour week.¹⁷²

TMXDI abbreviation for TETRAMETHYXYLENE DIISOCYANATE.¹⁴¹ cf. HDI, IPDI, MDI, and TDI¹⁴¹

TNO abbreviation for Dutch Organization for Applied Research¹⁷⁴ (*Toegespast Natuurwetenschappelijk Onderzoek*).

tobacco seed oil seed oil obtained from *Nicotiana tabacum*.⁶³

Considerable divergencies in composition of the oil have been reported. Some types contain as much as 70% LINOLEIC ACID, whereas others contain no linoleic acid and more than 54% of linolenic acid. In consequence, its constants as reported vary considerably. Certain types have excellent DRYING properties, and can replace LINSEED oil without detriment.

tobias acid intermediate used in the manufacture of DYESTUFFS. 2-naphthylamine-1-sulfonic acid.⁴¹

TOC abbreviation for TOTAL ORGANIC COMPOUND.^{172,152} (EPA)

tocopherols naturally occurring ANTIOXIDANTS in VEGETABLE OILS.^{63,144}

tole (Fr.) painted tinware; today it is done on many surfaces.^{81,148}

tolerance the total range of variation (usually bilateral) permitted for a size, position, or other required quantity; the upper and lower limits between which a DIMENSION must be held.¹⁵⁷ (ASTM)

toluene diisocyanate (TDI) an aromatic ISOCYANATE MONOMER used as an INTERMEDIATE in URETHANE COATINGS.¹⁴¹ See ISOCYANATE RESINS,¹⁶⁷ POLYURETHANES, POLYURETHANE FINISH,⁷¹ and URETHANE COATINGS.⁷¹ cf. HEXAMETHYLENE DIISOCYANATE (HDI), ISOPHORONE DIISOCYANATE (IPDI), DIPHENYLMETHANE DIISOCYANATE (MDI), TETRAMETHYXYLENE DIISOCYANATE (TMXDI)¹⁴¹

toluene AROMATIC SOLVENT used in the manufacture of coatings.^{141,164}

The commercial product has: boiling range, 105-112°C; fp, 50°F; vp, 26 mm Hg/30°C. The term "toluol" is still used commercially but is not preferred.

toluene-sulfonamide resins RESINS made by the interaction of toluene sulfonamide and FORMALDEHYDE.¹³⁰

toluidine reds Pigment Red 3 (12120). Series of red DYESTUFFS made by diazotizing 2-nitro-p-toluidine and coupling this with β naphthol under alkaline conditions.⁴¹

By altering the conditions of preparation, reds of different shade, brilliance, strength, etc., are obtained.

ASTM Test Method D970 covers para red and toluidine red pigments (toners) in the dry form commercially known as "pure."

ASTM D475 is the standard specification for

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of McClain et al:

Application Ser. No. : 09/578,001

Art Unit: 1714

Filed: May 24, 2000

Examiner: Sanders, Kriellion Antionette

For: METHOD AND APPARATUS FOR PRODUCING AN AQUEOUS PAINT
COMPOSITION FROM A PLURALITY OF PREMIXED COMPOSITIONS

DECLARATION OF ALAN SMITH UNDER C.F.R. 1.132

I, Alan Smith, after being duly sworn on the hereinafter declaration, depose and declare as follows:

1. I currently hold a BS Honours Degree (insert degree or certification) from Liverpool (insert university or institution) in Chemistry (insert subject matter for degree or certificate) in England (city, state).
2. I have personal knowledge of the facts contained in this Declaration. I am competent to testify as to the matters stated herein. I am not an owner of this patent, employee of the assignee, or receiving any other pecuniary interest in this matter.
3. I am employed by BASF Corporation in Charlotte, North Carolina (insert location, city and state) and have been since April 7th 1991 (insert date). My job title(s) at BASF are Technical Manager.
4. Acronal Optive 220 and Acronal DS6183 are the same product. The market name for the product was Acronal DS6183 until 1998, we then introduced our new nomenclature for latex products in the architectural coatings market. The product name then became Acronal Optive 220. This is simply a name change there were no changes made to the actual product.

5. Any reference to a resin made by BASF and having a designation of 6183 from a period from 1995 to the present would be understood by those of ordinary skill in the architectural paints industry to contain a binder resin that is an acrylic polymer commonly used as a binder in latex paints.
6. A facsimile and/or scanned and emailed copy of my signature is the same as an original for the purposes of this declaration.
7. There is no remuneration to me for my time, efforts, and expertise in reviewing and signing this declaration.
8. The undersigned being hereby warned that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of any patent directed to the same invention, declares that he is properly authorized to execute this Declaration on behalf of the applicant and all statements made of his own knowledge are true and all statements made on information and belief are believed to be true.

FURTHER, DECLARANT saiyeth not.

Dated: March 21st 2006



ALAN SMITH

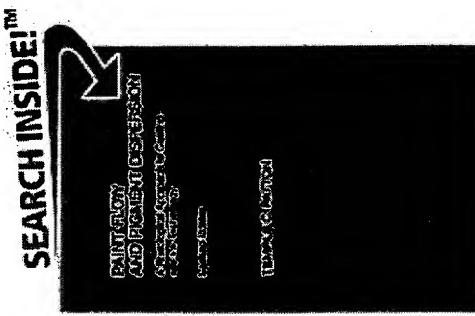
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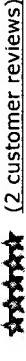


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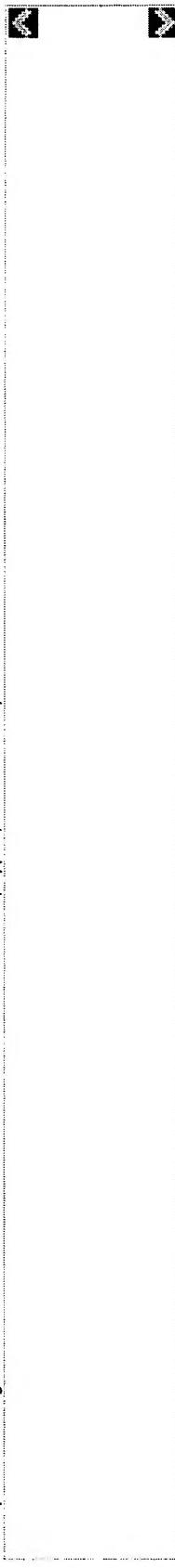
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